#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Odd Semester (Semester-I) Session – 2024-25

**Department: Mathematics** 

Class: MSc-I Mathematics Subject: MATH-601S: Real Analysis-I

Name of the Teacher: Dr Nisha Sharma

Month	Date		Topics to be covered	Academic Activity
				to be Undertaken
	From	То		
July	22.07.2024	31.07.2024	Countable and Uncountable Sets,	Assisgnment
-	0	ordinate and	Review the Monthly completion of Syllal	bus as per lesson
plans on 1.8.2	2024			
August	01.08.2024	31.08.2024	Metric Spaces, Open and Closed Sets,	Syllabus,
			Interior Point, Limit Point, Closed Set,	Examination pattern
			Equivalent Metrices,	discussed, Doubt
				Session.
		ordinate and	Review the Monthly completion of Syllal	bus as per lesson
plans on 2.9.2		•	T	
September	01.09.2024	30.09.2024	Subspaces, Compactness,	Doubt session,
			Connectedness, Convergent Sequences,	Assignments,
			Subsequences.	revision of a few
				topics.
Departmenta plans on 1.10		ordinate and	Review the Monthly completion of Syllal	bus as per lesson
October	01.10.2024	31.10.2024	Complete Metric Spaces, Limit Inferior	Doubt session,
			and Superior, Series, Limit and	Assignments, Power
			Continuity, Reimann Stieltjes integral	Point Presentations.
			definition and existence results	
Departmenta	l Meeting to Co	ordinate and	<b>Review the Monthly completion of Sylla</b>	bus as per lesson
plans on 1.11			v 1	1
November	01.11.2024	18.11.2024	Properties of R-S integral, Relation	Doubt session,
			between R-S and R integral, Integration	Assignments, Power
			of vector-valued function, Sequence	Point Presentations,
			and Series of functions	Question papers
				discussed. Revision
				of a few topics
		ordinate and	<b>Review the Monthly completion of Syllal</b>	bus as per lesson
plans on 18.1				
End semester	Examination 1	9.11.2024 to 2	26.12.2024	

## MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Odd Semester (Semester-I)

 $\frac{Session - 2024-25}{Department: Mathematics}$ 

Class: MSc-I Mathematics Subject: MATH-602S: Algebra-I Name of the Teacher: Dr Swati Sidana

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
July	22.07.2024	31.07.2024	Review of basic concepts of groups with emphasis on exercises.	Assignment
	tal Meeting to s on 1.8.2024	Coordinate a	and Review the Monthly completion o	f Syllabus as per
August	1.08.2024	31.08.2024	Permutation groups, Even and odd permutations	Syllabus, Examination pattern discussed, Doubt Session.
	tal Meeting to s on 2.9.2024	Coordinate a	and Review the Monthly completion o	f Syllabus as per
September	01.09.2024	30.09.2024	Conjugacy classes of permutations, Alternating groups, Simplicity of An, n > 4. Cayley's Theorem, Direct products, Fundamental Theorem for finite abelian groups, Sylow theorems and their applications, Finite Simple groups	Doubt session, Assignments, revision of a few topics.
	tal Meeting to s on 1.10.2024	Coordinate a	and Review the Monthly completion o	f Syllabus as per
October	03.10.2024	31.10.2024	Survey of some finite groups, Groups of order p2, pq (p and q primes). Solvable groups, Normal and subnormal series, composition series, the theorems of Schreier and Jordan Holder	Doubt session, Assignments, Power Point Presentations.
_	tal Meeting to s on 1.11.2024	Coordinate a	and Review the Monthly completion o	f Syllabus as per
November	01.11.2024	18.11.2024	Review of basic concepts of rings with emphasis on exercises. Polynomial rings, formal power series rings, matrix rings, the ring of Guassian Integers.	Doubt session, Assignments, Power Point Presentations, Question papers discussed. Revision of a few topics

Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 18.11.2024
End semester Examination 19.11.2024 to 26.12.2024

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Odd Semester (Semester-I) Session – 2024-25

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

**Subject: MATH-603S: DIFFERENTIAL EQUATIONS** 

Name of the Teacher: Dr Navjot Kaur

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
July	22.07.2024	31.07.2024	Basics of differential equations	Revision, assignment
Department	al Meeting to	Coordinate a	and Review the Monthly completion o	f Syllabus as per
lesson plans	on 1.8.2024			
August	01.08.2024	31.08.2024	Existence and uniqueness of solution	Syllabus,
			of first order equations. Boundary	Examination pattern
			value problems and Strum-Liouville	discussed, Doubt
			theory (Homogeneous).	Session.
Department	al Meeting to	Coordinate a	and Review the Monthly completion o	f Syllabus as per
	on 2.9.2024		• •	
September	01.09.2024	30.09.2024	Non-Homogeneous Strum-Liouville	Doubt session,
			Boundary value problems. ODE in	Assignments,
			more than 2-variables (Surfaces and	revision of a few
			curves in three dimension).	topics.
Department	al Meeting to	Coordinate a	and Review the Monthly completion o	f Syllabus as per
	on 1.10.2024		v	J I
October	01.10.2024	31.10.2024	Classification and methods to solve	Doubt session,
			specific kind of differential	Assignments, Power
			equations. Partial differential	Point Presentations.
			equations of first order (Linear and	
			non-linear).	
Department	al Meeting to	Coordinate a	and Review the Monthly completion o	f Syllabus as per
	on 1.11.2024			, F
November	01.11.2024	18.11.2024	Partial differential equations of	Doubt session,
			second order and their classification.	Question papers
				discussed. Revision
				tests.
		ordinate and	Review the Monthly completion of Syllal	bus as per lesson
plans on 18.1				
End semester	r Examination 1	9.11.2024 to 2	26.12.2024	

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Odd Semester (Semester-I) Session – 2024-25

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

Subject: MATH-604S: Complex Analysis-I

Name of the Teacher: Ms Promila

		Name of the	Teacher: Ms Promila	
Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
July	22.07.2024	31.07.2024	Complex plane, geometrical	Revision, assignment
			representation of complex number,	
Departmenta	l Meeting to Co	ordinate and I	Review the Monthly completion of Syllah	ous as per lesson
plans on 1.8.	2024		• •	-
August	01.08.2024	31.08.2024	joint equation of circle and line,	Syllabus,
			stereographic projection and spherical	Examination pattern
			of the extended complex plane.	discussed, Doubt
			Topology on complex plane,	Session.
			connected and simply connected sets.	
Departmenta	l Meeting to Co	ordinate and F	Review the Monthly completion of Syllab	ous as per lesson
plans on 2.9.				ous de per resson
September	01.09.2024	30.09.2024	Complex valued functions and their	Doubt session,
			continuity. Curves, connectivity	Assignments,
			through polygonal lines. Analytic	revision of a few
			functions, Cauchy-Riemann equations,	topics.
			Harmonic functions and Harmonic	
			conjugates. Power series, exponential	
			and trigonometric functions, arg z, log	
			z, a z and their continuous branches.	
Departmenta	l Meeting to Co	ordinate and I	Review the Monthly completion of Syllab	ous as per lesson
plans on 1.10				•
October	03.10.2024	31.10.2024	Complex Integration, line integral,	Doubt session,
			Cauchy's theorem for a rectangle,	Assignments, Power
			Cauchy's theorem in disc, index of a	Point Presentation.
			point with respect to a closed curve.	
Departmenta	al Meeting to Co	ordinate and I	Review the Monthly completion of Syllab	ous as per lesson
plans on 1.11				•
November	01.11.2024	18.11.2024	Cauchy's Integral farmula, Higher	Doubt session,
			derivatives, Morrera's theorem,	Assignments, Power
			Liouville's theorem, fundamental	Point Presentations,
			theorem of algebra. The general form	Question papers
			of Cauchy's theorem.	discussed. Revision
				of a few topics
Departmenta	al Meeting to Co	ordinate and I	Review the Monthly completion of Syllab	ous as per lesson
plans on 18.1				
End semester	r Examination 1	9.11.2024 to 26	5.12.2024	

#### MCM DAV College for Women, Sector – 36A, Chandigarh **Monthly Teaching Plans-Odd Semester (Semester-I)** <u>Session – 2024-25</u>

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

Subject: MATH-605S: Number Theory-I

		Name of th	e Teacher: Dr Leetika	
Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
July	22.07.2024	31.07.2024	Divisibility, Greatest common divisor, Euclidean Algorithm	Syllabus, Examination pattern discussed, Doubt Session.
		oordinate and	Review the Monthly completion of Syllab	ous as per lesson
plans on 1.8.		T		T
August	01.08.2024	31.08.2024	The Fundamental Theorem of arithmetic, Congruences, Special divisibility tests,	Assignment, Doubt Session.
Departmenta plans on 2.9.		oordinate and	Review the Monthly completion of Syllah	ous as per lesson
September	01.09.2024	30.09.2024	Chinese remainder theorem, Fermat's little theorem, Wilson's theorem, Residue classes and reduced residue classes, An Application to cryptography, Euler's theorem, Arithmetic functions	Doubt session, Assignments, revision of a few topics.
Departmenta		oordinate and	Review the Monthly completion of Syllab	ous as per lesson
October	01.10.2024	31.10.2024	Mobius inversion Formula, the greatest integer function, perfect numbers, Mersenne primes and Fermat numbers. Primitive roots and indices, Quadratic residues	Doubt session, Assignments, Power Point Presentations.
Departmenta plans on 1.11		oordinate and	Review the Monthly completion of Syllab	ous as per lesson
November	01.11.2024	18.11.2024	Quadratic reciprocity law, Jacobi symbol, Binary quadratic forms and their reduction, sums of two and four squares, positive definite binary quadratic forms, Diophantine equations	Doubt session, Assignments, Power Point Presentations, Question papers discussed. Revision of a few topics
plans on 18.1	1.2024		Review the Monthly completion of Syllab	ous as per lesson
End semester	r Examination 1	19.11.2024 to 2	26.12.2024	

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Even Semester (Semester-II) Session – 2024-25

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

Subject: MATH-621S: Real Analysis-II

Name of the Teacher: Dr Nisha Sharma

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
January	10.01.2025	31.01.2025	Differentiation of vector-valued function, Space of linear transformations as a metric - spaces, Differentiation of vector-valued function of several variables, Inverse function theorem, Implicit function theorem, Outer measure	Syllabus, Examination pattern discussed, Doubt Session.
		ordinate and	Review the Monthly completion of Syllal	bus as per lesson
plans on 1.2.		1	,	1
February	01.02.2025	28.02.2025	Measurable sets and Lebesgue measure, Non-measurable Set, Measurable functions, Littlewood's three principles	Doubt session, Assignments, revision of a few topics.
Departmenta	al Meeting to Co	ordinate and	Review the Monthly completion of Syllal	bus as per lesson
plans on 1.3.	0		, ,	•
March	01.03.2025	31.03.2025	Lebesgue Integral of bounded function over a set of finite mesure, Lebesgue Integral of non-negative function, General Lebesgue Integral Convergence in measure	Doubt session, Assignments, Power Point Presentations.
Departmenta	al Meeting to Co	ordinate and	<b>Review the Monthly completion of Syllal</b>	bus as per lesson
plans on 1.4.				
April	01.04.2025	26.04.2025	Differentiation of monotone function, Differentiation of an integral, Absolute continuity, Convex functions	Doubt session, Assignments, Power Point Presentations, Question papers discussed. Revision of a few topics.
Departmenta plans on 26.0		ordinate and	Review the Monthly completion of Syllal	bus as per lesson
End semeste	r Examination 2	28.04.2025 to (	04.06.2025	

# $\begin{array}{c} MCM\ DAV\ College\ for\ Women,\ Sector-36A,\ Chandigarh \\ Monthly\ Teaching\ Plans-Even\ Semester\ (Semester-II) \\ \underline{Session-2024-25} \end{array}$

**Department: Mathematics** 

Class: MSc-I Mathematics Subject: MATH-622S: Algebra-II Name of the Teacher: Dr Swati Sidana

Month	Date		Topics to be covered	Academic Activity
				to be Undertaken
	From	То		
January	10.01.2025	31.01.2025	Factorization Theory in Integral	Syllabus,
			Domains, Divisibility, Unique	Examination
			Factorization Domain (UFD),	pattern discussed,
			Principal Ideal Domain (PID),	Doubt Session.
			Euclidian Domain (ED) and their	
			relationships.	
Departmen	tal Meeting to	Coordinate a	nd Review the Monthly completion of	f Syllabus as per
lesson plan	s on 1.2.2025			
February	01.02.2025	28.02.2025	Noetherian and Artinian Rings,	Doubt session,
			Examples and Counter Examples,	Assignments,
			Artinian Rings without zero divisors,	revision of a few
			Nil Ideals in Artinian Rings, Hilbert	topics.
			Basis Theorem.	
Departmen	tal Meeting to	Coordinate a	nd Review the Monthly completion of	f Syllabus as per
	s on 1.3.2025		· -	-
March	01.03.2025	31.03.2025	Modules, Difference between	Doubt session,
			Modules and Vector Spaces, Module	Assignments,
			Homomorphisms, Quotient Module,	Power Point
			Completely reducible or Semisimple	Presentations.
			Modules, Free Modules,	
			Representation and Rank of Linear	
			Mappings	
Departmen	tal Meeting to	Coordinate a	nd Review the Monthly completion of	f Syllabus as per
_	s on 1.4.2025		· -	-
April	01.04.2025	26.04.2025	Smith normal Form over a PID,	Doubt session,
•			Finitely generated modules over a	Assignments,
			PID, Rational Canonical Form,	Power Point
			Applications to finitely generated	Presentations,
			abelian groups	Question papers
				discussed. Revision
				of a few topics.
Departmen	tal Meeting to	Coordinate a	nd Review the Monthly completion of	f Syllabus as per
_	s on 26.04.2025		•	
	ter Examinatio		to 04.06.2025	

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Even Semester (Semester-II) Session – 2024-25

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

**Subject: MATH-623S: VECTOR ANALYSIS AND MECHANICS** 

Name of the Teacher: Dr Sonica

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
January	10.01.2025	31.01.2025	Vectors: Vectors Scalar and vector point functions, Differentiation and integration of vectors, Gradient divergence and curl operators.	Syllabus, Examination pattern discussed, Doubt Session.
Departmen	tal Meeting to	Coordinate a	and Review the Monthly completion o	f Syllabus as per
lesson plan	s on 1.2.2025		• •	•
February	01.02.2025	28.02.2025	Green's and Stoke's theorems, Gauss' divergence theorem, Curvilinear coordinates.	Doubt session, Assignments, Class tests.
_	ntal Meeting to s on 1.3.2025	Coordinate a	and Review the Monthly completion o	f Syllabus as per
March	01.03.2025	31.03.2025	Mechanics: Mechanics Generalized co-ordinates. Lagrange's equations. Hamilton's canonical equations. Hamilton's principle of least action. Reduction to the equivalent one body problem. The equations of motion and first integral.	Doubt session, Assignments, Power Point Presentations. Class tests.
		Coordinate a	and Review the Monthly completion o	f Syllabus as per
lesson plan	s on 1.4.2025			
April	01.04.2025	26.04.2025	The equivalent one-dimensional problem and classification of orbits. The Viral theorem. Rigid body motion about an axis. Moving axis.	Doubt session, Assignments, Question papers discussed. Revision of the topics important from examination point of view.
Department plans on 26.		oordinate and	Review the Monthly completion of Syllab	ous as per lesson
	er Examination	28.04.2025 to (	)4.06.2025	

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Even Semester (Semester-II) Session – 2024-25

**Department: Mathematics** 

**Class: MSc-I Mathematics** 

**Subject: MATH-624S: Complex Analysis-II** 

Name of the Teacher: Ms Promila

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	To		
January	10.01.2025	31.01.2025	Taylor's theorem, Laurent's theorem,	Syllabus,
			Maximum Modulus principal and	Examination pattern
			Schwarz's Lemma, zeros and	discussed, Doubt
			singularities of a function, application of	Session.
			Schwarz's Lemma, Taylor series and	
			Laurent series	
Departmen	tal Meeting to Co	ordinate and	<b>Review the Monthly completion of Syllab</b>	ous as per lesson
plans on 1.	2.2025		-	
February	01.02.2025	28.02.2025	Singularities, Cauchy's Residue	Doubt session,
			theorem,,calculus of residue,bilinear	Assignments,
			transformation,Zeros and poles of	revision of a few
			meromorphic functions,Rouche's	topics.
			theorem, Argument Principal	
Departmen	tal Meeting to Co	ordinate and	<b>Review the Monthly completion of Syllab</b>	ous as per lesson
plans on 1.	3.2025			
March	01.03.2025	31.03.2025	Definitions and examples of conformal	Doubt session,
			mappings,infinite products,weierstrass	Assignments, Power
			theorem,,Mittagleffer's theorem,	Point Presentations.
			canonical product	
		ordinate and	Review the Monthly completion of Syllab	ous as per lesson
plans on 1.		T		
April	01.04.2025	26.04.2025	Analytic continuation through power	Doubt session,
			series, Natural boundary, The Gamma	Assignments, Power
			function and Riemann Zeta function	Point Presentations,
				Question papers
				discussed. Revision
Donoutre	tal Masting to Ca	audinata and	Daview the Monthly completion of Callel	of a few topics.
plans on 26		orumate and	Review the Monthly completion of Syllab	ous as per tesson
	0.04.2025 ter Examination 2	Q 04 2025 to 1	M 06 2025	
Linu semesi	iei examination 2	0.04.2023 10 (	7.00.4043	

#### MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans-Even Semester (Semester-II) Session – 2025-25

**Department: Mathematics** 

Class: MSc-I Mathematics Subject: MATH-625S: Number Theory-II

Name of the Teacher: Dr Leetika

Month	Date		Topics to be covered	Academic Activity to be Undertaken
	From	То		
January	10.01.2025	31.01.2025	Farey sequences, Continued fractions, Approximation of reals by rationals, Pell's equations,	Syllabus, Examination pattern discussed, Doubt Session.
Departmenta plans on 1.2.		ordinate and	Review the Monthly completion of Sylla	abus as per lesson
February	01.02.2025	28.02.2025	Minkowski's theorem and its applications,	Doubt session, Assignments, revision of a few topics.
Departmenta plans on 1.3.		ordinate and	Review the Monthly completion of Sylla	abus as per lesson
March	01.03.2025	31.03.2025	Partitions, Order of magnitude and average order of arithmetic functions,	Doubt session, Assignments, Power Point Presentations.
Departmenta plans on 1.4.		ordinate and	Review the Monthly completion of Sylla	abus as per lesson
April	01.04.2025	26.04.2025	Euler Summation Formula, Abel's Identity, Elementary results on distribution of primes.	Doubt session, Assignments, Power Point Presentations, Question papers discussed. Revision of a few topics.
Departmenta plans on 26.0		ordinate and	Review the Monthly completion of Sylla	•
End semeste	r Examination 2	28.04.2025 to (	04.06.2025	