Lesson Plan   for (2021 -22)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans **(Semester II)**
Session – (2021-22)

Name of the Teacher/s :   Dr Neela Pawar, Dr Swati Sidana ,   Dr Sonica, Dr Leetika, Dr Arshpreet

Department: Mathematics

Class B Sc I (SEM 2)   Subject : Mathematics   Section (s) NM & Voc

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
Solid Geometry	4 March, 2022	10 April	Transformation of Second degree equation, Sphere	Lecture method, discussions
	11 April	10 may	Cylinder, Cone with vertex at origin	Assignments, Test
	11 May	15June, 2022	Cone continued, equations of ellipsoid, hyperboliad and paraboliad.	Discussion of exam pattern and previous question papers
Calculus II	4 March, 2022	10 April	Real numbers, Limits, Continuity	Introduction of syllabus , exam pattern, doubt sessions
	11 April	10 may	Rolle's , Lagranges, Cauchy's Taylor's Theorem	Extra questions, MST
	11 May	15June, 2022	Maclaurin's theorems and applications, Hyperbolic Functions, successive differentiation	Revision of few selected topics, Discussion od previous question papes
Theory of equations	4 March, 2022	10 April	Euclid's algorithm,synthetic division, complex roots, Relations between roots and coefficients,	Lecture, Assignments, Test
	11 April	10 may	transformation of Eqns, Descartes rule of signs, Newton's method of divisors	Quiz, discussion,
	11 May	15June, 2022	Cardon method, Biquadratic eqns.	
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus was held after each unit of lesson plans				

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.

Other Methods adopted by the teacher – Please write the specific teaching method

Lesson Plan   2021-22

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Semester 4)
Session – 2021-22

Name of the Teacher/s :   Dr Swati Sidana, Dr Leetika , Dr Sonica, Dr Nisha,   Dr Arshpreet, Ms Pallavi
Department ;   Mathematics

Class B A/ B Sc II (Semester 4) Subject: Mathematics Section (s) A, B, Voc

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
Advanced Calculus II	4 March, 2022	10 April	Sequences, sub Sequences	
	11 April	10 may	Sequential and uniform Continuity, Series, p test, Comparison test, Cauchy's Integral and root test, Ratio Test	
	11 May	15June, 2022	De Morgan test, Gauss test, log test, Leibnitz theorem, Absolute and conditional convergence, Riemann's arrangements.	
Differential equations II	4 March, 2022	10 April	Laplace and inverse Laplace transformations	
	11 April	10 may	Applications of Laplace transformations, Partial Differential eqns	
	11 May	15June, 2022	Series solutions , Bessels and Legendre's eqns and solutions	
Dynamics	4 March, 2022	10 April	Motion of a particle with constant acceleration, falling bodies, law of motion, motion of two particle connected with string, motion along a plane	
	11 April	10 may	Variable acceleration, SHM, elastic string, curvilinear motion,	
	11 May	15June, 2022	Work , power, energy, Relative motion, momentum, collision of elastic bodies.	
Departmental Meeting was held to Review the Monthly completion of Syllabus as per lesson plans				

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.

Other Methods adopted by the teacher – Please write the specific teaching method

Lesson Plan 2021-22

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (**Semester 6)**
Session – 2021-22

Name of the Teacher/s: DR Neela Pawar, Dr Leetika, Ms Chitra, Ms Pallavi

Department :   Mathematics

Class B A / B Sc III   Sem 6   Subject: Mathematics   Section (s) A, B, Voc

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	**To**		
Analysis II	4 March, 2022	10 April	Double and triple integrals,	
	11 April	10 may	Vector Calculus, Sequences and Series of functions,	
	11 May	15June, 2022	Power Series, Fourier Series	
Linear Algebra	4 March, 2022	10 April	Vector Space, Subspaces, Basis and Dimensions	
	11 April	10 may	Linear transformation, rank and Nullity, linear transformation and matrices	
	11 May	15June, 2022	Characteristic roots and vectors, Cayley Hamilton theorem, Diagonalizable operators and matrices	
Numerical Analysis	4 March, 2022	10 April	Solution of equations, Interpolation**,** Numerical Differentiation,	
	11 April	10 may	Numerical Quadrature, Linear equations,	
	11 May	15June, 2022	The Algebraic Eigen value Problems, Ordinary Differential equations	
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.

Other Methods adopted by the teacher – Please write the specific teaching method

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans
Session – 2021-22

Department: **Mathematics** **Class: M Sc I Semester 2**

Subject : MATH 624S Complex Analysis II **Name of the Teacher: Dr Neela Pawar**

S.No.	Dates (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	4 March, 2022	10 April	Maximum module principle, Taylor and laurants, series, Calculus of Residue,	Doubt Session, Examination pattern discussed, Test Conducted
2	11 April	10 may	Bilinear transformation, Zeroes and poles of meromorphic functions, Conformal mappings, Infinite products	Doubt session, Assignments provided Mid Term Test
3	11 May	15June, 2022	Weirestrass and Mittaglefer's theorems, Analytic continuation, Gamma and Riemann Zeta functions.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject: MATH 621S Real Analysis-II Name of the Teacher: Dr Sonica

1	4 March, 2022	10 April	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, Measurable sets and Lebesgue measure, Non-measurable set	Syllabus intimation, Examination Pattern, marking scheme discussed, Doubt sessions
2	11 April	10 may	Measurable functions, Littlewood's three principles, Lebesgue Integral of bounded function over a set of finite mesure, Lebesgue Integral of non-negative function, General Lebesgue Integral	Assignments, tests, Mid Term Examination
3	11 May	15June, 2022	Convergence in measure, Differentiation of monotone function, Differentiation of an integral, Absolute continuity, Convex functions	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject : MATH 622S Algebra-II Name of the Teacher: Dr Swati Sidana

1	4 March, 2022	10 April	Factorization theory in Integral Domains, Divisibility,UFD, PID,ED and their relationship,Noetherian and Artinian rings,examples and counter examples, Artinian rings without zero divisors.	Doubt Session, Examination pattern discussed, Test Conducted
2	11 April	10 may	Nil ideals in Artinian rings, HilberT Basis theorem, Modules, Difference between Modules and Vector spaces,Module Homomorphism,Quotient module, Completely reducible and semi simple module.	Doubt session, Assignments provided Mid Term Test held

3	11 May	15 June, 2022	Free Modules,Representation and Rank of linear mappings, Smith normal form over a PID, Finitely generated modules over a PID,Rational Canonical form,Applications to finitely generated abelain groups.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject: MATH 623S   Vector Analysis and Mechanics   Name of the Teacher: Dr Arshpreet Kaur

1	4 March, 2022	10 April	Scalar and Vector point function, Differentian and integration,Gradient,Curl and divergence operators and their applications,Green's theorem.Stoke's theorem,Gauss Divergence theorem and its applications.	Doubt Session, Examination pattern discussed, Test Conducted
2	11 April	10 may	Curvilinear co-ordinates, Generalized co-ordinates, Generalized acceleration, Generalized moments, Lagrange equation of motion and its applications, Variation principles for higher order and several variables.	Doubt session, Assignments provided Mid Term Test held
3	11 May	15June , 2022	Hamilton canonical equation, Hamiltonian principle of least action, Reduction to the equivalent one body problem,Viral theorem,Rigid body motion about an axis,about a moving axis, The equation of motion and first integral, Classification of orbits.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject: MATH 625S   Number Theory -II   Name of the Teacher: Dr Leetika

1	4 March, 2022	10 April	Farey sequences, Continued fractions, Approximation of reals by rationals, Pell's equations, Minkowski's theorem and its applications,	Doubt Session, Examination pattern discussed, Test Conducted, Assignments provided
2	11 April	10 may	Partitions, Order of magnitude and average order of arithmetic functions, Euler summation formula	Doubt session, Assignments provided Mid Term Test held
3	11 May	15 June, 2022	Abel's Identity, Elementary results on distribution of primes.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Departmental Meeting was held after the completion of every month to review the syllabus distribution

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method

Lesson Plan for (2021-22)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans
Session – 2021-22

Department: Mathematics   Class: M. Sc. 2 Semester- 4

S.N.	Dates (Monthly) From	To	Topics to be Covered	Academic Activity Undertaken*
Subject :MATH-698S : Non-Linear Programming Name of the Teacher : Dr. Ekta Jain			
1	4 March, 2022	10 April	Nonlinear Programming, Minima and Maxima of convex function and concave functions. Generalizations of convex functions and their basic properties, Unconstrained problems, Fritz John conditions and Kuhn-Tucker conditions	Doubt Session, Examination pattern discussed, Test Conducted , Assignments provided
2	11 April	10 may	Duality in Nonlinear Programming, Quadratic Programming, Linear fractional programming, Nonlinear fractional programming, Dinkelbach's approach	Doubt session, Assignments provided Mid Term Test
3	11 May	15June , 2022	Game theory - Two-person, Zero-sum Games with mixed strategies, graphical solution, solution by Linear Programming.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.
	Subject: MATH-681S : Probability and Mathematical Statistics-II Name of the Teacher: Ms. Chitra			
1	4 March, 2022	10 April	Point estimation, unbiasedness, consistency, efficiency and Sufficiency. Factorization theorem, completeness, Rao-Blackwell theorem, Cramer-Rao inequality. Maximum likelihood method of estimation and method of moments. Interval estimation, confidence intervals for means, difference of means and variances.	Syllabus intimation, Examination Pattern, marking scheme discussed, Doubt sessions
2	11 April	10 may	The basic idea of significance test. Null and alternative hypothesis, Type-I and TypeII errors. Uniformly most powerful tests, Likelihood Ratio tests. T , Chi-square and F-distributions. Tests of significance based on t, Chi-square and F Distribution	Assignments, tests, Mid Term Examination
3	11 May	15June , 2022	One way and two way Analysis of Variance (ANOVA). Non-Parametric Tests: Sign test, Wilcoxon signed rank test, Mann-whitney test.	Doubt session, Assignments, Question papers discussed. Revision of a few topics.
	Subject: MATH-638S : Functional Analysis Name of the Teacher: Dr. Nisha Sharma			
1	4 March, 2022	10 April	Banach Spaces with examples of LP ([a,b]) and C ([a,b]), Hahn Banach theorem, open mapping theorem, closed graph theorem, Baire Category theorem,	Doubt Session, Examination pattern discussed,Test conducted, taken few presentations
2	11 April	10 may	BanachSteinhauns theorem (uniform boundedness principle), Boundedness and continuity of linear transformation, Dual Spaces, embedding in second dual	Doubt session, Assignments provided Mid Term Test held

3	11 May	15June , 2022	Hilbert space, orthonormal basis, Bessel's inequality, Riesz Fischer theorem, Parseval's identity, bounded Linear functionals; projections, Riesz Representation theorem, adjoint operators, self adjoint, normal, unitary and isometric operators	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject: MATH-637S : Linear Algebra   Name of the Teacher: Dr. Swati Sidana

1	4 March, 2022	10 April	Vector Spaces-definition and examples, subspaces, direct sum of subspaces, linear dependence and independence, basis and dimension ,quotient spaces, linear transformation ,Algebra of linear transformation	Doubt Session, Examination pattern discussed, Test Conducted
2	11 April	10 may	Linear functions, dual spaces, rank and nullity of linear transformation ,invariant subspaces, Linear transformation— eigen values and eigen vectors, Characteristic polynomial and minimal polynomial,	Doubt session, Students presentation taken, Mid Term Test
3	11 May	15June , 2022	Diagonalization and triangularization of a matrix, Jordan and Rational canonical forms, bilinear spaces, symmetric bilinear form, Sylvester's Theorem, quadratic forms, Hermitianforms, Inner product spaces, Gram-Schmidt orthonormalization process	Doubt session, Assignments, Question papers discussed. Revision of a few topics.

Subject : MATH-696S : Fluid Mechanics-II   Name of the Teacher: Dr. Arshpreet

1	4 March, 2022	10 April	Viscous Flows: Stress components, Stress and strain tensor, coefficient of viscosity and Laminar flow, plane Poiseuille flows and Couette flow. Flow through tubes of uniform cross section in the form of circle, Ellipse, equilateral triangle, annulus, under constant pressure gradient	Course Teaching, Assignments, Doubt session with discussions
2	11 April	10 may	Diffusion of vorticity. Energy dissipation due to viscosity, steady flow past a fixed sphere, dimensional analysis, Reynold numbers, Prandtl's boundary layer, Boundary layer equation in two dimensions, Karman integral equation.	Mid. Term , Presentations, Assignments
3	11 May	15June , 2022	Elements of wave motion, waves in fluids, surface gravity waves, standing waves, dispersion relation, path of particles, waves at the interface of two liquids, equipartition of energy, group velocity, energy of propagation of waves.	Class tests, Previous year QP discussions, Projects, Doubts taking, Presentations

Departmental Meeting was held after the completion of every month to review the syllabus distribution.

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Other Methods adopted by the teacher – Please write the specific teaching method