Lesson Plan

Mehr Chand Mahajan DAV College for Women, Sector - 36A, Chandigarh

Monthly Teaching Plans-Odd Semester (Semester-I)

Session – 2024-25

Department: Mathematics

Class: BSc/B.A-I Mathematics

Subject: MAT-DSC1 (MAJ/MIN)-101: ALGEBRA &TRIGONOMETRY

Name of the Teacher: Dr Swati Sidana, Dr Leetika

Month	**Date**		**Topics to be covered**	**Academic Activity to be Undertaken**
	From	**To**		
July	22.07.2024	31.07.2024	Principle of Mathematical and its applications	Syllabus, Doubt Session.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.08.2024				
August	01.08.2024	31.08.2024	Properties of Binomial coefficients, Binomial Theorem for any index, Summation of infinite Binomial series Determinant of an n × n matrix and its properties. Definition and properties of hermitian and skewhermitian matrices. Row and column vectors, linearly dependent and independent vectors, row rank, column rank and their equivalence, rank of a matrix. Rank of product of matrices and rank of sum of matrices. Theorems on consistency of a system of linear equations (both homogeneous and nonhomogeneous).	Syllabus, Examination pattern discussed, Doubt Session.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 02.09.2024				
September	01.09.2024	30.09.2024	Eigen-values, eigen-vectors and characteristic equation of a matrix, Cayley-Hamilton theorem and its use in finding inverse of a matrix. Diagonalization.	Doubt session, Assignments, revision of a few topics.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.10.2024				
October	01.10.2024	31.10.2024	De Moivre's theorem, applications of De Moivre's theorem including primitive nth root of unity. Expansions of sin nθ, cos nθ, $sin^n 0, cos^n 0$,The exponential, logarithmic, direct and inverse circular and hyperbolic functions of a complex variable.	Doubt session, Assignments, Power Point Presentations.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.11.2024				
November	01.11.2024	18.11.2024	Solution of trigonometric equations, sine, cosine and projection formulae for arbitrary triangles	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				

Lesson Plan
MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans-Even Semester (Semester-II)
Session – 2024-25
Department: Mathematics
Class: B.Sc.-I (NM &Voc.)/B.A.-I
Subject: MAT-DSC2 (MAJ/MIN)-201: CALCULUS-I
Name of the Teachers: Dr Swati Sidana, DrLeetika

Month	**Date**		**Topics to be covered**	**Academic Activity to be Undertaken**
	From	**To**		
January	10.01.2025	31.01.2025	**Real Numbers**. Order properties of real numbers, bounds, *l.u.b.* and *g.l.b.*, order completeness property of real numbers, Archimedean property of real numbers. **Limits**: Functions (exponential, logarithmic, modulus, trigonometric, polynomials etc.), ε - δ definition of the limit of a function, basic properties of limits, methods computations, infinite limits	Syllabus, Examination pattern discussed, Doubt Session.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.02.2025				
February	01.02.2025	28.02.2025	**Continuity**. ε-δ **definition of a continuous function, various methods to check continuity / discontinuity of a function, types of discontinuities, continuity of composite** functions, sign of a function in a neighborhood of a point of continuity, intermediate value theorem, maximum and minimum value theorem. **Differentiability**. Definition of a differentiable real valued function of a real variable, computing derivatives of elementary functions by using definition. Geometrical meaning of derivative of a function at a point.	Doubt session, Assignments, Class tests.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.03.2025				
March	01.03.2025	31.03.2025	**Derivatives**. Revision of various rules to compute derivatives (e.g. product rule, quotient rule, chain rule etc.), Introduction to hyperbolic, inverse hyperbolic functions of a real variable, their derivatives. Successive differentiations, Leibnitz's theorem, indeterminate forms.	Doubt session, Assignments. Class tests.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 01.03.2025				

April	01.04.2025	26.04.2025	**Applications of Derivatives**: Tangents and normals, Differentials and Approx./ Errors. **Mean value theorems**: Rolle's Theorem, Lagrange's mean value theorem, Cauchy's mean value theorem, their geometric interpretation and applications, Taylor's theorem, Maclaurin's theorem with various form of remainders and their applications.	Doubt session and tests. Question papers discussed. Revision of the topics important from examination point of view.
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 26.04.2025				
End semester Examination 28.04.2025 to 04.06.2025				