

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Shweta Dhawan

Subject- Mathematics

Paper- BM-111 (Algebra)

Class- B.A/B.Sc Ist Year –

September, 2022 1 st Week 1 Sept-3 Sept	<ul style="list-style-type: none"> • Definition of Different Types of matrices. • Transpose & Transpose conjugate of matrix. • Adjoint of a square matrix • Inverse of a square matrix. • Singular and Non-Singular matrices
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	<p>Solution of System of linear equations. Define symmetric & skew-symmetric matrices. Define Hermitian & skew- Hermitian matrices. Properties and examples of matrices. Orthogonal matrix. Unitary matrix.</p>
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	<p>Properties of orthogonal & unitary matrices. Define Rank of a matrix. Row Equivalent matrix. Column Equivalent matrix. Row-Echelon matrix.</p>
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	<p>Column- Echelon matrix. Row rank and column rank of matrix. Reduction of matrix to Triangular form. Define Normal form of a matrix. Examples of normal form. Non-singular matrices in normal form.</p>
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	<p>Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti</p>
5 th Week 27 Sept - 29 Sept	<p>Linear Dependence & Independence of column matrices. Theorems of linear Dependence & Independence. Define characteristic matrix and equation.</p>
30 Sept, 2022	Talent show

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Subject- Mathematics

Paper- BM-111 (Algebra)

Class- B.A/B.Sc Ist Year -

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Define characteristic roots. Spectrum of a matrix Examples related to characteristic roots. Define characteristic vector. Examples related to characteristic vectors.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Define Scalar Polynominal. Define matrix polynominal. Cayley-Hamilton throrem. Discuss examples of Cayley-Hamilton theorem Some theorems on characteristic roots. Some theorems on characteristic vectors.
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Miminal & Monic Polynomials. Derogatory & Non-Derogatory Matrices. System of Non-Homogeneous Linear equations. System of Homogeneous Linear equations..
22 Oct - 26 Oct	Dwali Break
4 th Week 27 Oct - 31 Oct	Method to write matrix of Bilinear form. Method to write matrix of Quadratic form. Diagonalization of a quadratic form. Discuss index, signature & Rank of quadratic form. Positive definite & Semi-definite form. Negative definite & Semi- definite form.
30 Oct, 2022	Sunday

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Name of the Teacher – Dr. Shweta Dhawan

Subject- Mathematics

Paper- BM-111 (Algebra)

Class- B.A/B.Sc Ist Year -

November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Sylvester's Criterion for positive definiteness. Remainder & factor theorem for roots. Synthetic Division with examples. Fundamental theorem of Algebra. Rational & Irrational Roots. Common Roots
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Equal roots of an equation. Multiple roots of an equation. Roots with signs changed Roots multiplied by a given number.
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Reciprocal roots and reciprocal equation. Roots diminished by a given number. Transformation of the Cubic equation. Transformation of the biquadratic equation.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Equations of squared differences of a cubic. Discuss, equations of diminishing by a root. Cardan's Method.
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams Discuss nature of roots of cubic equation. Irreducible cases of Cardan's method. Descarte's solution of the Biquadratic equations. Discuss Descarte's examples Define Ferrari's method.
4 Dec, 2022	Sunday
3 rd Week 15 Dec, 2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. I

Subject- Mathematics

Paper- Calculus

September, 2022 1st Week 1 Sept-3 Sept	Discuss program outcomes and course outcomes. Limit of a function and questions based on it.
4 Sept, 2022	Sunday
2nd Week 5 Sept- 10 Sept	Continuous functions. Derivative of a Function. Successive Differentiation.
11 Sept, 2022	Sunday
3rd Week 12 Sept-17 Sept	Questions based on Successive Differentiation. Some general theorems on differentiable functions and expansions.
18 Sept, 2022	Sunday
4th Week 19 Sept-24 Sept	Some general theorems on differentiable functions and expansions.
23 Sept, 2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5th Week 27 Sept - 29 Sept	Problem discussion session
30 Sept, 2022	Talent show

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. I

Subject- Mathematics

Paper- Calculus

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Asymptotes. Oblique Asymptotes and Questions based on it
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Intersection of Curve and its Asymptotes Polar Asymptotes Polar Asymptotes Curvature Articles related to Curvature
13 Oct, 2022 16 Oct,2022	KarwaChauth Sunday
3 rd Week 17 Oct - 21 Oct	Questions based on Curvature Radius of Curvature in polar form. Curvature at Origin
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Centre of Curvature and Evolute of a Curve. Curve Tracing
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Curve Tracing of Parametric Equations. Curve Tracing of Parametric Equations Tracing of Polar Curves
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Reduction Formulae .
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Rectification.

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. I

Subject- Mathematics

Paper- Calculus

20 Nov,2022	Sunday
4th Week 21 Nov - 26 Nov	Quadrature
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Discussion of problems. Revision
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – MS. SILKY PURI

Class- B.SC.I/B.A.I

Subject- Mathematics

Paper- BM-113(SOLID GEOMETRY)

September, 2022 1 st Week 1 Sept-3 Sept	General Equation of second degree, conic sections, classification To find the centre, length and equation of axes of central conic.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	To find foci, directrix of the conic To find the axis, latus rectum and tangent at the vertex of the parabola To find the equation of director circle Continued....
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	To find foci, directrix of the conic To find the axis, latus rectum and tangent at the vertex of the parabola To find the equation of director circle Continued....
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Polar equation of conic. Tangent and normal to the conic Continued.... Sphere: plane section of sphere, sphere through a given circle Continued...
23 Sept, 2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Intersection of two spheres, Coaxial system of spheres. Cones: Right circular cone, enveloping cone

	Continued....
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Student Problems Revision TEST
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Cylinder:Right circular cylinder Enveloping cylinder Continued with examples and exercises. Continued
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Revision and tests.
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Central conicoids:Equation of tangent plane Equation of director sphere with examples Normal to the conicoids... Continued..
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day

1 st Week 2 Nov - 5 Nov	Polar plane of a point Enveloping cone of a conicoids Enveloping cylinder of a conicoid Continued...
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Continued conicoid with examples. Continued conicoids with exercises Revision & Test
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Introduction to paraboloids Paraboloids:circular section Discuss paraboloids with examples Discuss paraboloids with exercises
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Plane section of conicoids Continued examples Continued exercises Continued.
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Generating lines and its properties Continued properties Continued examples of generating lines Continued exercises Confocal conicoids:introduction to confocal conicoids Continued.
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday

3rd Week 12Dec - 14 Dec	Reduction of second degree equations Questions. Discuss the properties and their nature Class discussion Student problems Discuss about their standard forms Student problems.
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. II

Subject- Mathematics

Paper- Advance Calculas

September, 2022 1 st Week 1 Sept-3 Sept	Discussion of course outcomes Continuous Functions
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Continuous Functions.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Uniform Continuity. The derivative and mean value theorems
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	The derivative and mean value theorems.
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Indeterminate forms
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Indeterminate forms. Problem solving sessions
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Limit, Continuity of functions of two variables.
3 rd Week 17 Oct - 21 Oct	Partial Differentiation

22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Partial Differentiation
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Differentiability of functions of two variable.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Maximum and Minimum of a function of two variables.
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Curves in space
20 Nov,2022	Sunday
4 th Week 21 Nov - 26 Nov	Curves in space
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Circle of Curvature and Spherical Curvature, Involutes and Evolutes
3 rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Shweta Dhawan

Class- B.A/B.Sc (II)

Subject- Mathematics

Paper- Partial Differential Equations

September, 2022 1 st Week 1 Sept-3 Sept	Intrraction With students
	Discuss Programme outcomes and Course outcomes
	Basic about differential equation
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Basic about differential equation
	Basic about differential equation
	Partial differential equation
	Types of differential equation
	Some important results and formulae
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Order and degree
	Linear and non linear partial differential equation of first order
	Complete solution
	Singular solution, general solution
	Continue
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Examples
	Examples
	Solution of lagranges linear equation
	Examples
	Examples
	Continue
23 Sept,2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day
25 Sept, 2022	Sunday
26 Sept, 2022	Maharana Agrasen Jayanti

5th Week 27 Sept - 29 Sept	Charpit general method of solution
	Examples
	Examples
	Compatible system of first order
	Examples
30 Sept, 2022	Examples
October, 2022 1st Week 1 Oct, 2022	Talent Show Holiday
2 Oct, 2022	Sunday
1st Week 3 Oct - 8 Oct	Jacobis method
	Examples
	Examples
	Doubts
5 Oct, 2022 9 Oct, 2022	Dussehra Sunday
2nd Week 10 Oct - 15 Oct	Linear partial differential equation of second and higher order
	Examples
	Examples
	Examples
	Linear homogenous equation
	Examples
13 Oct, 2022 16 Oct, 2022	Karwa Chauth Sunday
3rd Week 17 Oct - 21 Oct	Non linear homogenous equation
	Examples
	Examples
	Examples
	Partial differential equation with constant coefficients
	Examples
22 Oct - 26 Oct	Diwali Break
4th Week	Examples

27 Oct - 31 Oct	
	Examples
	Examples
	Equation reducible with constant coefficients
	Complimentary equation
	Examples
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Examples
	Particular integrals
	Examples
	Examples
	Examples
	Examples
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Equation reducible to linear equation with constant coefficients
	Examples
	Examples
	Doubts
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Classification of linear partial differential equation of second
	Continue
	Examples
	Examples
	Examples
	HYPERBOLIC EQUATION
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Examples
	Examples

	Examples
	Parabolic equation
	Examples
	Elliptic equations and Examples
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Sessional Exams Reduction of second order linear p.d.e into canonical form and related examples , solution of linear hyperbolic equation, monges method and related examples, cauchy problem for second order and related Examples
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Wave equation in oneand two dimensions , related examples, method of seperation of variables of laplace equation, related examples, heat equation in one and two dimensions, related examples
3rd Week 15 Dec,2022 Onwards	University Examination

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**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – **MS. SILKY PURI**

Class- **B.SC.II/B.A.II(SEM-III)**

Subject- **Mathematics**

Paper- **STATICS(BM-233)**

September, 2022 1 st Week 1 Sept-3 Sept	<p>Forces acting at a point</p> <p>Resultant and its components, Magnitude and direction of its resultant</p> <p>Resolved parts of a force</p> <p>Questions</p> <p>Triangle law of vectors</p> <p>Questions</p>
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	<p>Lamda mew theorem</p> <p>Lami's theorem</p> <p>Questions based on Lami's Theorem</p>
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	<p>Conditions of equilibrium of concurrent forces</p> <p>Revision</p>
23 Sept, 2022 25 Sept, 2022 26 Sept, 2022	<p>Shaheedi Divas/ Haryana War Heroes' Martyrdom Day</p> <p>Sunday</p> <p>Maharana Agrasen Jayanti</p>
5 th Week 27 Sept - 29 Sept	<p>Equilibrium of bodies placed on a smooth inclined planes</p> <p>Parallel forces</p> <p>Resultant of two like and unlike parallel forces acting on a rigid body</p>
30 Sept, 2022	Talent show
October, 2022 1 st Week	Talent Show Holiday

1 Oct,2022	
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	. Questions.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Continued.... Analogue of lami's theorem Questions based on analogue of lami's theorem Continued..
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	. Introduction to moments Definition of moments Varignon's Theorem-when the forces acting at a point When the forces are parallel Moment of a force about a line Continued...
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Questions based on moments. Introduction to couples Moment of a couple, Sign of a moment of a couple Continued.
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day

1 st Week 2 Nov - 5 Nov	Equilibrium of two couples Continued Questions.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Analytical conditions of equilibrium of coplanar forces Equilibrium of three forces acting at a point Questions Continued
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Trigonometrical Theorem. Virtual work Principle of virtual work Introduction to wrenches Resultant wrench of two given wrenches Find the locus of the central axis, if pitches are given Null lines and null planes Find the null point of the plane for the system of forces Find the condition that straight line may be a null line Stable, Unstable and neutral equilibrium. Conditions of stability of equilibrium.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Forces which may be omitted in forming the equation of virtual work. Questions. Continued.
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Forces in three dimensions Palleloped law of forces

	<p>Questions</p> <p>Axis of couple</p> <p>Questions. Conditions of equilibrium of a rigid body</p> <p>Questions</p> <p>Continued</p> <p>Poinsot's central axis</p> <p>Questions</p>
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3 rd Week 12Dec - 17 Dec	<p>Condition in order that a general system of forces in space reduce to a single Force.</p> <p>Equation of central axis</p> <p>Conditions of equilibrium of any no. of coplanar forces</p> <p>Friction:Introduction</p> <p>Force of friction,coefficient of friction</p> <p>Angle and cone of friction</p> <p>Problems on equilibrium of rods and ladders</p> <p>Continued</p> <p>Centre of gravity:</p> <p>C.G. of a uniform rods,C.G. of uniform lamina in form of a parallelogram</p> <p>C.G. of a thin uniform triangular lamina.</p> <p>C.G. of right circular solid cone.</p>
3 rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester
(September to December, 2022)

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. III

Subject- Mathematics

Paper- Real Analysis

September, 2022 1 st Week 1 Sept-3 Sept	Discuss course outcomes with students. Introduction to riemann integral, definition of partition, norm and refinement.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Upper sum and lower sums. Examples based on lower sums and upper sums , Upper integral and lower integral.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Riemann integral, Integrability of continuous and monotonic functions
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Fundamental theorem of integral calculus , Mean value theorem of integral calculus and examples. Introduction to improper integrals improper integrals and their types & their convergence
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday MaharanaAgrasenJayanti
5 th Week 27 Sept - 29 Sept	Comparison tests, Abel's and Dirchlet's tests, Frullani's integral
30 Sept, 2022	Talent show

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Manju Sharma

Class- B.Sc. III

Subject- Mathematics

Paper- Real Analysis

October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Integral as a function of parameter, Continuity, Differentiability and integrability of an integral of a function of a parameter.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Definition and example of a metric spaces, neighbourhoods, limit points, interior points.
13 Oct, 2022 16 Oct,2022	KarwaChauth Sunday
3 rd Week 17 Oct - 21 Oct	Open and closed sets,closure and interior, boundary points,subspace of a metric space, equivalent metrics.
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Cauchy sequences, completeness, Cantor's intersection theorem, Baire's category theorem.
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Category space baire 's category theorem contraction principle in a metric space fixed point, banach's fixed point theorem doubts and quick revision of chapter 6
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Continuous function in metric spaces examples, theorems based upon continuity in metric spaces
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev Jayanti Sunday
3 rd Week 14 Nov - 19 Nov	uniform continuity in metric spaces examples based upon u.c. isometry and some mappings examples

20 Nov,2022	Sunday
4 th Week 21 Nov - 26 Nov	Definitions of covers , examples bolzano weierstrass property (bwp) sequentially compact metric space theorem based upon sequentially compact metric space finite intersection property (fip)
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Separated sets ,connected and disconnected sets theorem based upon separated sets , Components continuity and connectedness ,test revision and problems
3 rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Dr. Shweta Dhawan

Class- B.Sc. III

Subject- Mathematics

Paper- BM-352...Groups and Rings

September, 2022 1 st Week 1 Sept-3 Sept	Intraaction With students Discuss Programme outcomes and Course outcomes. Binary operation, properties of binary operation, Definition of GROUP, SemiGroup, Finite and Infinite Group, Order of a Group , Examples based on Group, Examples continued.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	General properties of Groups, Cancellation Laws, Examples, Order of an element of a Group, Theorems based on order of an element of a Group , Theorems and Examples based on order of an element of a Group.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Complexes And subgroups of a Group,Definition of Subgroup,Theorems based on Subgroup , Theorems continued and Examples based on subgroup of a Group, Cyclic Groups,Some theorems on Cyclic Group, Examples based on Cyclic Group,Definition of a Coset of a Group, Definition of Right Coset and Left Coset of a Group,Theorems on Cosets , Examples based on Coset,Definition of index of a subgroup in a Group.
18 Sept, 2022	
4 th Week 19 Sept-24 Sept	Langrange's Theorem, Some other theorems based on order of an element, test of Group, Subgroup and Cosets, Definition Of Normal Subgroup, Simple Subgroup, Some Theorems On Normal Subgroup , Definition of Quotient Group,Theorems on Quotient Groups, GROUP DISCUSSION ON Group, Subgroup, Coset, Normal Subgroup, Quotient Group.
23 Sept,2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day

25 Sept, 2022 26 Sept, 2022	Sunday MaharanaAgrasenJayanti
5 th Week 27 Sept - 29 Sept	Homomorphisms Of Groups, Isomorphisms Of Groups, Isomorphic Groups, Some Theorems On Homomorphisms, Examples Based On Homomorphisms Definition Of Kernel Of Homomorphisms And Examples Based On Kernel Of Homomorphisms Of Groups , Fundamental Theorems Of Homomorphisms Of Groups, Second Theorem Of Isomorphisms , Third Theorem Of Isomorphisms, Defintion Of Automorphisms Of Groups, Examples Based On Automorphisms OF A Group , Definition Of Inner Automorphisms, Examples Based On Inner Automorphisms
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct, 2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Definition Of Inner Automorphisms, Examples Based On Inner Automorphisms , Group Of Automorphisms Of A Cyclic Group, Examples Based On Cyclic Groups, Definition Of Centre Of A Group, Examples And Theorems Based On Centre Of A Group, Definition Of Normalizer Of An Element, Theorems Based On Normalizer And Centralizer Of An Element Of A Group
5 Oct, 2022 9 Oct, 2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	AUTOMORPHISM OF A GROUP - CONTINUED Theorems Continued , Conjugate Subgroup, Commutator Subgroup, Theorems Based On Commutator Subgroup , Revision Of Homomorphisms, Isomorphisms And Automorphisms , Group Discussion On Normal Subgroup, Simple Group And Quotient Group, Test Of Homomorphisms, Isomorphisms And Automorphisms ,
13 Oct, 2022 16 Oct, 2022	KarwaChauth Sunday
3 rd Week 17 Oct - 21 Oct	PERMUTATION GROUPS

	<p>Definition Of Permutation, Equality Of Permutation, Composition Of Two Functions, Examples Based On Composition Of Two Functions , Identity Permutation, Inverse Of A Permutation, Permutation Group, Cyclic Permutation Of A Group, Examples Based On Cyclic Permutation, Transposition, Disjoint Cycles , Examples Based On Disjoint Cycles, Even And Odd Permutations , Alternating Group, Centre Of Permutation Of A Group, Cayley Theorem, Group Discussion On Permutation Groups</p>
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	<p>RINGS AND FIELDS</p> <p>Definition Of Ring And Types Of Rings, Examples, Rings With Or Without Zero Divisors, Definition Of Integral Domain, Skew Field And Field, Theorems Based On Integral Domain, Skew Field And Field , Examples Based On Integral Domain, Skew Field And Field , Examples Continued, Definition Of Subrings</p>
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	<p>SUBRINGS</p> <p>Definition Of Subrings And Theorems Based On Subrings , Centre Of A Ring And It's Theorems, Examples , Characteristics Of A Ring And Theorems On Characteristics Of A Ring , Group Discussion On Ring, Subring, Integral Domain, Skew Field And Field , Test Of Ring And Subring , Test Of Field, Subfields And Integral Domain</p>
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	<p>IDEALS AND QUOTIENT RINGS</p> <p>Definition Of Ideals,Examples Of Ideals,Sum Of Two Ideals,Ideal Generated By A Set, Product Of Two Ideals, Theorems On Ideals,Definition Of Principal Ideal,Unity Ideal,Maximal Ideal,Theorems Based On It, Theorems Continued , Examples Based On Principal Ideal, maximal IdealAnd Prime Ideal, Examples Continued,Definition Of Quotient Ring And Its Examples., Definition Of Ring Homomorphism, Examples And Theorems Based On It, Definition Of Ring Isomorphism</p>
8 Nov,2022	Sh. Guru Nanak Dev jayanti

13 Nov, 2022	Sunday
3 rd Week 14 Nov - 19 Nov	HOMOMORPHISM OF RINGS Kernel Of A Ring Homomorphism, Theorems Based On Kernel And Examples, Fundamental Theorem Of Ring Homomorphism, First Theorem Of Isomorphism., Second Theorem Of Isomorphism, Examples Based On Ring Isomorphism, Embedding Of Rings, Embedded Ring, Set Of Quotient Of A Ring, Theorem On Embedded Ring , Theorems Continued On Embedded Ring And Examples Based On It., Test Of Topic Ideals And Quotient Rings.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	EUCLIDEAN RINGS: Divisibility In A Commutative Ring, Unit Element, Theorems Based On Unit Element, Associates , Prime Element, Irreducible Elements, Gaussian Integers, Greatest Common Divisor, Least Common Multiple, Theorems Based On L.C.M And G.C.D, Euclidean Domain And Its Theorems , Principal Ideal Domain And Its Theorems, Theorems Continued And Examples
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams POLYNOMIAL RINGS: Group Discussion On Euclidean Ring, Euclidean Domain, G.C.D, L.C.M, Polynomial Rings, Degree Of A Polynomial, Polynomial Over A Ring, Embedding Of R Into $R[X]$, Polynomials Over An Integral Domain, Theorems Based On Integral Domain, Polynomial Over A Field and Theorems Based On It, Ring Of Polynomials In N Variables Over An Integral Domain, Divisibility Of Polynomials Over A Field,
4 Dec, 2022	Sunday
3 rd Week 15 Dec, 2022 Onwards	University Examination

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Ms. MEENU KALRA

Class- B.Sc. III

Subject- NUMERICAL ANALYSIS

Paper- III

September, 2022 1 st Week 1 Sept-3 Sept	Finite difference operators, finding the missing terms and effect of errors in a difference tabular values.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Interpolation with equal and unequal intervals. Newton's forward interpolation formula. Newton's Backward interpolation formula..
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Newton's divided difference. Lagrange's interpolation formula. Hermite's formula.
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Central difference operators, Gauss forward interpolation formula, Gauss backward interpolation formula. Sterling formula, Bessel's formula.
23 Sept, 2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Numerical differentiation, probability distribution of random variable.
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct, 2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Binomial distribution, Poisson's distribution, normal distribution.
5 Oct, 2022	Dussehra

9 Oct,2022	Sunday
2 nd Week 10 Oct - 15 Oct	Mean ,variance and fitting.introduction to eigen values problems.
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Power method ,jacobi's method,given's method,House holder method
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	QR method,lanczo's method.
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Numerical integration .Numerical cote's quadrature formula.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Trapezoidal rule,simpson's one third rule and three eight rule
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Chebyshev formula and Gauss quadrature formula
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Numerical solution of ordinary differential equations,single step method ;picard method,taylor's method.
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Sessional Exams

4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Euler's method ,Runga –kutta method .Multistep method:predictor-corrector method. Class test & Revision
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester
(September to December, 2022)

Name of the Teacher – MS. SILKY PURI

Class- BBA-I

Subject- Mathematics

Paper- Elements of business maths(BBA-104)

September, 2022 1 st Week 1 Sept-3 Sept	Sets theory:representations of sets.types of sets.different operations of a set.venn diagrams.practicle applications of sets.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Logical statement and truth tables:truth tables,compound statements.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Conjunction,disjunction,logical equivalence,laws of logic,conditional statements,quantifiers with examples and exercises
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Linear and quadratic equations :degree of an equation ,roots of an equation.
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Simultaneous linear equations ,linear laws of demand and supply equations.
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	. Market equiblirium,methods of solving a quadratic equation.permutations and combinations:factorial,permutations with repetitions.
5 Oct,2022	Dussehra

9 Oct,2022	Sunday
2 nd Week 10 Oct - 15 Oct	Circular permutations ,circular combinations,practical problems on permutations and combinations.
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Binomial theorems:binomial theorems for a positive integral index,determination of a particular term from end.
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Middle term in a binomial expansion,application of binomial theorem.
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Limits and continuity :functions ,limit of a function ,infinite limits,evaluation of limits.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Continuity of a function,algebra of continuous functions,differential calculus:derivative of a function,first principle.
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Product rule,quotient rule,chain rule,differentiation of a logarithmic and exponential function,derivatives of higher order,maxima and minima of a function.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Matrices :meaning and elementary operations on matrices,inverse of a matrix.
27 Nov, 2022	Sunday

5 th Week 28 Nov – 3 Dec	Solution to linear equations (based on payroll ,wages and commission)using crammer’s rule,solutions to linear equations using matrix inversion method.
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3 rd Week 12Dec - 17 Dec	Problem discussion. Revision and tests.
3 rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester
(September to December, 2022)

Name of the Teacher – Ms. MEENU KALRA

Class- B.Com.-Ist

Subject:-Mathematics

Paper- Business Mathematics(BC-105)

September, 2022 1 st Week 1 Sept-3 Sept	Sequence and types of sequence. Arithmetic Progression (A.P.) and related examples. Representation of terms in A.P. and examples. Questions
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Sum of 'n' terms of an A.P. and examples Arithmetic Means Geometric means(G.P.) Examples Sum of a G.P. upto infinity Geometric means Examples
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Application of A.P. and G.P. to business Mathematics Examples Algebra of matrices Examples Basic operations on matrices Multiplication of matrices Examples
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Examples Positive integral power of matrices Transpose of a matrix Examples Determinants Examples Minor and cofactors Properties of determinants Examples Continued...
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti

5 th Week 27 Sept - 29 Sept	Adjoint of a matrix Examples Inverse of a square matrix Examples Inverse of a square matrix using Elementary operations Solution of system of equations by using elementary operations Examples
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct, 2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Solution of system of equations by using Cramer's Rule Solution of system of linear equations using Matrices Application of matrix in particular problems Examples
5 Oct, 2022 9 Oct, 2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Examples Class Discussion Student problems Class Test & Problems Compound Interest Simple interest and related examples General formula for determination of compound interest Examples Examples
13 Oct, 2022 16 Oct, 2022	Karwa Chauth Sunday

3rd Week 17 Oct - 21 Oct	Continuous Compounding of interest Problem on effective rate of interest Examples Continued... Differentiation Derivative using first principle General theorems on Differentiation Examples
22 Oct - 26 Oct	Diwali Break
4th Week 27 Oct - 31 Oct	Differentiation of products of two function Differentiation using chain rule method Examples Differentiation of logarithmic and exponential functions Examples Logarithmic Differentiation Examples Differentiation of parametric functions Derivative of higher order Examples
30 Oct, 2022	Sunday
November, 2022 1st Week 1 Nov, 2022	Haryana Day
1st Week 2 Nov - 5 Nov	Maxima and minima Examples Second derivative test for finding local maxima and minima Examples
6 Nov, 2022	Sunday

2 nd Week 7 Nov – 12 Nov	<p>Absolute maxima and absolute Minima</p> <p>Problems on maxima and minima</p> <p>Examples</p> <p>Optimization of economic functions</p> <p>Examples</p>
8 Nov,2022 13 Nov, 2022	<p>Sh. Guru Nanak Dev jayanti</p> <p>Sunday</p>
3 rd Week 14 Nov - 19 Nov	<p>Logarithms</p> <p>Examples</p> <p>Product and quotient formula for logarithms</p> <p>Examples</p>
20 Nov, 2022	<p>Sunday</p>
4 th Week 21 Nov - 26 Nov	<p>Two system of logarithms</p> <p>Tables of logarithms</p> <p>Examples</p> <p>Annuity and related examples</p> <p>Present value of an annuity and examples</p> <p>Solution of particular Problems</p> <p>EXAMPLES</p>
27 Nov, 2022	<p>Sunday</p>
5 th Week 28 Nov – 3 Dec	<p>Sessional Exams</p>
4 Dec, 2022	<p>Sunday</p>
2 nd Week 5 Dec - 10 Dec	<p>REVISION</p>
3 rd Week 15 Dec,2022 Onwards	<p>University Examination</p>

KVA DAV College for Women, Karnal

**Lesson Plan for the Odd Semester
(September to December, 2022)**

Name of the Teacher – Ms. MEENU KALRA

Class- B.C.A.-I

Subject: MATHEMATICS

Paper- MATHEMATICAL FOUNDATION

September, 2022 1 st Week 1 Sept-3 Sept	Sets, subsets and operations on sets, venn diagram of sets.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Permutation and combinations. partially ordered sets. lattices. boolean algebra
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Epsilon and delta function of the continuity of a function of a single variable. basic properties of limits, continuous functions and classification of discontinuities
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Derivative of a function .derivative of logarithmic, exponential, trigonometrical functions. derivative of inverse trigonometrical functions. derivatives of hyperbolic functions
23 Sept, 2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Higher order derivatives. formation of differential equations. discuss about examples and exercises
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct, 2022	Talent Show Holiday
2 Oct, 2022	Sunday

1 st Week 3 Oct - 8 Oct	Order and degree of differential equation.geometrical approach to the existence of the solution of the differential equation $dy/dx=f(x,y)$ Problem discussion and revision.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Ordinary differential equations.differential equation of first order and first degree.exact differential equations
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Ordinary differential equations.differential equation of first order and first degree.exact differential equations
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Linear differential equations of higher order with constant coefficients.homogeneous linear differential equations with examples
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Linear differential equations reducible to homogeneous differential equations with examples and exercises.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Application of differential equations to geometry.
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Revision and class tests.

20 Nov, 2022	Sunday
4th Week 21 Nov - 26 Nov	Revision and class tests.
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Sessional Exams
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (November, 2022 to January, 2023)

Name of the Teacher –Ms. Vandana Sharma

Class- M.Sc. (sem I)

Subject- Mathematics

Paper- Advanced Abstract Algebra-I(MM-401)

November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Automorphisms and Inner automorphisms of a group G. The groups $\text{Aut}(G)$ and $\text{Inn}(G)$. Automorphism group of a cyclic group. Normalizer and Centralizer of a non-empty subset of a group G.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Conjugate elements and conjugacy classes. Class equation of a finite group G and its applications. Derived group (or a commutator subgroup) of a group G. perfect groups. Zassenhau's Lemma.
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Normal and Composition series of a group G. Scheier's refinement theorem. Jordan Holder theorem. Composition series of groups of order p^n and of Abelian groups.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Cauchy theorem for finite groups. Π - groups and p-groups. Sylow Π -subgroups and Sylow p-subgroups. Sylow's 1st, 2nd and 3rd theorems. Application of Sylow theory to groups of smaller orders.
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Characteristic of a ring with unity. Prime fields $\mathbb{Z}/p\mathbb{Z}$ and \mathbb{Q} . Field extensions. Degree of an extension. Algebraic and transcendental elements. Simple field extensions. Minimal polynomial of an algebraic element.
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Conjugate elements. Algebraic extensions. Finitely generated algebraic extensions. Algebraic closure and algebraically closed fields.
11 Dec, 2022	Sunday
3 rd Week 12 Dec - 17 Dec	Splitting fields., finite fields.. Normal extensions. Separable elements, separable polynomials and separable extensions
18 Dec, 2022	Sunday
4 th Week	Theorem of primitive element. Perfect fields. Galois extensions. Galois group of

19 Dec-24 Dec	an extension. Dedekind lemma Fundamental theorem of Galois theory.
25 Dec, 2022	Sunday
5thWeek 26 Dec-31Dec	Frobenius automorphism of a finite field. Klein's 4-group and Dihedral group. Galois groups of polynomials. Fundamental theorem of Algebra.
29 Dec, 2022 1 Jan,2023	Guru Gobind Singh Jayanti Sunday
1stWeek 2 Jan-7 Jan	Solvable groups Derived series of a group G. Simplicity of the Alternating group A_n ($n \geq 5$). Non-solvability of the symmetric group S_n and the Alternating group A_n ($n \geq 5$). Roots of unity Cyclotomic polynomials and their irreducibility over \mathbb{Q}
8 Jan,2023	Sunday
2ndWeek 9 Jan-14 Jan	Galois radical extensions. Cyclic extensions. Solvability of polynomials by radicals over \mathbb{Q} . Symmetric functions and elementary symmetric functions. Construction with ruler and compass only.
15Jan,2023	Sunday
16 Jan,2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (November, 2022 to January, 2023)

Name of the Teacher – Ms. Rakhi

Class- M.Sc. (sem I)

Subject- Mathematics

Paper- Real analysis-I(MM-402)

November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Section-I , An Introduction to Riemann Stieltjes Integral. Definition of Riemann Stieltjes Integral. Existence of Riemann Stieltjes Integral. Properties of the Riemann Stieltjes Integral. Integration and Differentiation under integral.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Integration and Differentiation under integral continued. The Fundamental Theorem of Integral Calculus. Introduction to Integration by Parts. Integration of Vector Valued Functions.
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev Jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Introduction to Rectifiable curves. Section-II , Introduction to pointwise and uniform convergence. Difference between pointwise and uniform convergence. Cauchy criterion for uniform convergence. Introduction to Weierstrass M-test Abel's test and Dirichlet's test for uniform convergence.
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Introduction to uniform convergence and continuity. Uniform convergence and Riemann Stieltjes integration. Uniform convergence and differentiation. Existence of a real continuous nowhere differentiable function. Introduction to Equicontinuous families of functions. Difference between continuous, uniform continuous and equicontinuous functions.
27 Nov, 2022	Sunday

5 th Week 28 Nov – 3 Dec	Weierstrass Approximation Theorem. Section-III, An Introduction to Functions of Several variables. Linear Transformations and derivative in an open subset of R^n . Introduction to chain rule, partial derivatives, directional derivatives and the Contraction Principle.
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Inverse Function Theorem. Implicit Function Theorem. Introduction to Jacobians, extremum problems with constraints and Lagrange's Multiplier method. Derivative of higher order, Mean value theorem for real functions of two variables. Interchange of order of differentiation and differentiation of integrals.
11 Dec, 2022	Sunday
3 rd Week 12 Dec - 17 Dec	Topic continued... Discuss student problems on section-3 rd . Section-IV , Introduction to Power Series. Uniqueness theorem for power series. Abel's lemma and Abel's theorem. Tauber's theorem.
18 Dec, 2022	Sunday
4 th Week 19 Dec-24 Dec	Taylor's theorem. Exponential and Logarithmic functions. Discuss student problems. Test
25 Dec, 2022	Sunday
5 th Week 26 Dec- 31 Dec	Properties of Exponential and Logarithmic functions. Trigonometric functions and their properties. Fourier series and Gamma Function.
29 Dec, 2022 1 Jan, 2023	Guru Gobind Singh Jayanti Sunday
1 st Week 2 Jan-7 Jan	Topic continued... An Introduction to Integration of differential forms. Partitions of Unity and differential forms. Topic continued... Test
8 Jan, 2023	Sunday
2 nd Week 9 Jan-14 Jan	Stokes Theorem. Discuss student problems. Discuss student problems. Test
15 Jan, 2023	Sunday
16 Jan, 2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (November, 2022 to January, 2023)

Name of the Teacher – Ms. Rakhi

Class- M.Sc. (sem I)

Subject- Mathematics

Paper- Topology (MM-403)

<p>November, 2022 1st Week 1 Nov, 2022</p>	<p>Haryana Day</p>
<p>1st Week 2 Nov - 5 Nov</p>	<p>Definition and examples of a topological spaces, neighbourhoods, neighbourhood system of a point and its properties. Interior point and interior of a set, interior as an operator and its properties. Definition of closed set as complement of open set. Limit point of a set, derived set of a set, definition of closure of a set as union of the set and its derived set. Adherent point of a set, closure of a set as set of adherent point, properties of closure, closure as an operator and its properties. Boundary of a set, dense sets, a characterization of dense sets. Base for a topology and its characterization. Base for neighbourhood system subbase for a topology. relative topology and subspace of a T.S.</p>
<p>6 Nov, 2022</p>	<p>Sunday</p>
<p>2nd Week 7 Nov – 12 Nov</p>	<p>Alternate examples of defining a topology using properties of ‘Nbd system’, ‘interior operator’, ‘closed sets’, kuratowski closure operator and base. First countable, second countable and seperable spaces, their relationships and hereditary property. About countability of a collection of disjoint open sets in a seperable and a second countable space. Lindelof theorem. Comparison of topologies on a set.</p>
<p>8 Nov, 2022 13 Nov, 2022</p>	<p>Sh. Guru Nanak Dev jayanti Sunday</p>
<p>3rd Week 14 Nov - 19 Nov</p>	<p>About intersection and union of topologies. Infimum and supremum of a collection of topologies on a set. The collection of all topologies on a set as a complete lattice. Definition, examples and characterizations of continuous functions. Composition of cts functions, open and closed functions, homeomorphism . Embedding, tychonoff product topology in terms of standard subbase. Related examples Projection maps, their continuity and openness. characterization of product topology as the smallest topology with projection continuous.</p>

	Continuity of a function from a space into a product of spaces. T_0 , T_1 space.
20 Nov, 2022	Sunday
4th Week 21 Nov - 26 Nov	<p>T_2, Regular and T_3 separation axioms, their characterization .</p> <p>Examples on these spaces.</p> <p>Basic properties i.e. hereditary property of T_0, T_1, regular and T_3 spaces.</p> <p>Do some practice sum. About hausdorffness of quotient space.</p> <p>Productive property of T_1 and T_2 spaces. Quotient topology w.r.t. a map.</p> <p>Related examples.</p> <p>Continuity of a function with domain a space having quotient space.</p> <p>Completely regular and tychonoff spaces, their hereditary and productive properties</p>
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	<p>Embedding lemma and embedding theorem.</p> <p>Normal and T_4 spaces: definitions and examples.</p> <p>Test and revision.</p> <p>Solve Practice sum and discuss them.</p> <p>Urysohn's lemma, complete regularity of a regular normal space.</p> <p>T_4 implies tychonoff, tietze's extension theorem (statement only).</p>
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	<p>Definition and examples of filters on a set.</p> <p>Collection of all filters on a set as a p.o. set, finer filters.</p> <p>Methods of generating filters/finer filters, ultra filter (u.f.) and its characterizations.</p> <p>Ultra filter principle.</p> <p>Image of filter under a function. Convergence of filters : limit point and limit of a filter and relationship between them.</p>
11 Dec, 2022	Sunday
3rd Week 12 Dec - 17 Dec	<p>Continuity in terms of convergence of filters, hausdorffness and filter convergence.</p> <p>Test and revision Continuity and compact set, compactness and separation properties.</p> <p>COMPACTNESS: definitions and examples of compact spaces.</p> <p>Definition of a compact subset as a compact subspace.</p> <p>Related examples</p>
18 Dec, 2022	Sunday
4th Week 19 Dec-24 Dec	<p>Relation of open cover of a subset of a T.S. in the subspace with that in the main space.</p> <p>Compactness in terms of finite intersection property (f.i.p.).</p> <p>Regularity and normality of a compact hausdorff space.</p> <p>Compactness and filter convergence.</p> <p>Convergence of filter in a product space.</p> <p>Tychonoff product theorem using filters.</p>

	<p>Practice questions. Related examples. Questions related to above topic.</p>
25 Dec, 2022	Sunday
5thWeek 26 Dec-31Dec	<p>Tychonoff space as a subspace of a compact hausdroff space and its converse. related examples related examples Compactness and hausdroff compactification. Test and revision Stone- Cech compactification.</p>
29 Dec, 2022 1 Jan,2023	Guru Gobind Singh Jayanti Sunday
1stWeek 2 Jan-7 Jan	<p>related examples Closedness of compact subset, closedness of continuous map from a compact space into a hausdroff space and its convergence. Group discussion on different topologies. Test and revision Test and revision</p>
8 Jan,2023	Sunday
2ndWeek 9 Jan-14 Jan	<p>Examples for revision. Assignment on compactness. related examples related examples Revision of syllabus</p>
15Jan,2023	Sunday
16 Jan,2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (November,2022 to January, 2023)

Name of the Teacher – Monila Bansal

Class- M.Sc. (sem I)

Subject- Mathematics

Paper- Complex analysis-I(MM-404)

November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	An introduction to Complex analysis Introduction to power series and its convergence Theorems based on sum, product of power series and its radius of convergence Examples based on radius of convergence Differentiability of sum function of power series
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Exp(z) and its properties Theorem based on branch of logarithm Power of a complex number, their branches and analyticity Definition :path in a region, smooth path, contour, simple connected region and multiple connected region Theorem based on bounded variation and total variation
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Cauchy goursat theorem Cauchy theorem for simply and multiple connected domain Cauchy integral formula Extension of Cauchy integral formula for multiple connected domain Higher order derivative of Cauchy integral formula Examples related to Cauchy integral formula Gauss mean value theorem
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Morera's theorem Fundamental theorem of algebra Entire functions and radius of convergence Cauchy inequality and liouville's theorem Theorem and examples based on liouville's theorem
27 Nov, 2022	Sunday
5 th Week 28 Nov – 3 Dec	Winding number of a closed curve with some properties Zero of an analytic function Entire function and its radius of convergence Taylor's theorem Theorem based examples

4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Laurent's series Example related to laurent's series Maximum modulus principle Minimum modulus principle Schwarz lemma Theorem based on Schwarz lemma
11 Dec, 2022	Sunday
3 rd Week 12Dec - 17 Dec	Singularity and their classification Pole of a function and its order Examples based on singularities Riemann theorem
18 Dec, 2022	Sunday
4 th Week 19 Dec-24 Dec	Cassorati-weierstrass theorem Meromorphic function ,poles and zeros of meromorphic function Argument principle Rouche's theorem Example based on rouche's theorem
25 Dec, 2022	Sunday
5 th Week 26 Dec-31Dec	Inverse function theorem Related examples Def: residue Example based on residue of a pole Residue at infinity
29 Dec, 2022 1 Jan,2023	Guru Gobind Singh Jayanti Sunday
1 st Week 2 Jan-7 Jan	Cauchy residue theorem Theorem based on residue Liouville theorem based on residue theorem Example on Cauchy residue theorem Integral type I Integral type II
8 Jan,2023	Sunday
2 nd Week 9 Jan-14 Jan	Integral type III Integral type IV Bilinear transformation ,their properties Critical points Cross ratio and its example
15Jan,2023	Sunday
16 Jan,2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (November, 2022 to January, 2023)

Name of the Teacher – Ms. Rakhi

Class- M.Sc. (sem I)

Subject- Mathematics

Paper- Differential Equations-I (MM-405)

Nov, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Definition of initial value problem and equivalent integral equation Definition of E-approximate solution and examples Equicontinuous set of functions Ascoli -Arzela theorem Cauchy-Peano existence theorem and it's corollary
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Definition of Lipschitz condition and examples Differential inequalities and uniqueness Gronwall 's inequality Successive approximation with examples Group discussion Picard-Lindelof theorem
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Continuation of solution Maximal interval of existence Extension theorem Kneser's theorem (statement only) Revision Definition and notations of linear differential system
20 Nov, 2022	Sunday
4 th Week 21 Nov - 26 Nov	Linear homogenous system Definition of fundamental matrix and Adjoint system Reduction to smaller homogenous system Non-homogeneous linear system Variation of constant Linear system with constant coefficients Linear system with periodic coefficients Floquet theory
27 Nov, 2022	Sunday

5 th Week 28 Nov – 3 Dec	Linear differential equation of order n Linear combinations and examples Linear dependence and linear independence solutions Definition, necessary and sufficient condition for linear dependence and linear independent solutions of homogeneous linear differential equation Abel's Identity
4 Dec, 2022	Sunday
2 nd Week 5 Dec - 10 Dec	Fundamental set Wronskian theory and examples Reduction of order Non-homogenous linear differential equation Variation of parameters Adjoint Equations Lagrange's Identity
11 Dec, 2022	Sunday
3 rd Week 12Dec - 17 Dec	Green's formula Linear equation of order n with constant coefficients Numericals System of differential equations The n-th order equation Dependence of solutions on initial conditions and parameters Examples Preliminaries
18 Dec, 2022	Sunday
4 th Week 19 Dec-24 Dec	Definition of Continuity Definition of differentiability Definition of maximal and minimal solutions Group discussion Differential inequalities Numericals
25 Dec, 2022	Sunday
5 th Week 26 Dec-31Dec	Test Theorem of wintner Uniqueness theorems Kamke's theorem
29 Dec, 2022 1 Jan,2023	Guru Gobind Singh Jayanti Sunday
1 st Week 2 Jan-7 Jan	Osgood theorem Group discussion Revision Test Numerical of Lipschitz condition

8 Jan,2023	Sunday
2ndWeek 9 Jan-14 Jan	<p>Numerical of picard- lindelof theorem</p> <p>Numerical of fundamental matrix</p> <p>Numerical of variation of parameters</p> <p>Numerical of Wronskian theory</p> <p>Numerical of linear combinations,linear dependent and independent solutions</p> <p>Group discussion</p>
15Jan,2023	Sunday
16 Jan,2023 Onwards	University Examinations

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Ms. Vandana Sharma

Class- M.Sc.(sem III)

Subject- Mathematics

Paper- Functional Analysis(501)

September, 2022 1 st Week 1 Sept-3 Sept	Normed linear spaces, Banach spaces and examples, subspace of a Banach space, completion of a normed space.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Quotient space of a normed linear space and its completeness, product of normed spaces. finite dimensional normed spaces and subspaces, equivalent norms, compactness and finite dimension, F.Riesz's lemma
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Bounded and continuous linear operators, differentiation operator, integral operator, bounded linear extension, linear functional , bounded linear functional , continuity and boundedness definite integral,
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Canonical mapping, linear operators and functional on finite dimensional spaces, normed spaces of operators, dual spaces with examples.
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Examples based on theories. Test.
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday

1st Week 3 Oct - 8 Oct	Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. application to bounded linear functionals on $C[a,b]$.
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2nd Week 10 Oct - 15 Oct	Riesz-representation theorem for bounded linear functionals on $C[a,b]$. Riesz-representation theorem for bounded linear functional on $C[a,b]$,
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3rd Week 17 Oct - 21 Oct	Adjoint operator, norm of the adjoint operator. Reflexive spaces, uniform boundedness theorem. Some of its applications to the space of polynomials
22 Oct - 26 Oct	Diwali Break
4th Week 27 Oct - 31 Oct	Fourier series. Strong and weak convergence, weak convergence in l^p Convergence of sequences of operators, uniform operator convergence.
30 Oct, 2022	Sunday
November, 2022 1st Week 1 Nov, 2022	Haryana Day
1st Week 2 Nov - 5 Nov	Strong operator convergence, weak operator convergence. strong and weak* convergence of a sequence of functionals. Open mapping theorem, bounded inverse theorem. closed linear operators, closed graph theorem, differential operator.
6 Nov, 2022	Sunday
2nd Week 7 Nov – 12 Nov	Relation between closedness and boundedness of a linear operator. Inner product spaces, Hilbert spaces and their examples, pythagorean theorem, Apolloniu's identity, Schwarz inequality, continuity of innerproduct, completion of an inner product space.
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3rd Week 14 Nov - 19 Nov	Subspace of a Hilbert space, orthogonal complements and direct sums, projection theorem, characterization of sets in Hilbert spaces whose space is

	dense. Orthonormal sets and sequences, Bessel's inequality, series related to orthonormal sequences and sets.
20 Nov, 2022	Sunday
4th Week 21 Nov - 26 Nov	Sesquilinear forms on a Hilbert space. total(complete) orthonormal sets and sequences, Parseval's identity, separable Hilbert spaces. Representation of functionals on Hilbert spaces, Riesz representation theorem for bounded linear functionals on a Hilbert space, sesquilinear form, Riesz representation theorem for bounded.
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Sessional Exam
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3rd Week 12Dec - 17 Dec	
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Monila Bansal

Class- M.Sc.(sem III)

Subject- Mathematics

Paper- Calculus of Variation and analytic Mechanics(MM-502)

September, 2022 1 st Week 1 Sept-3 Sept	An introduction to functional Some basic theorem of calculus of variation Fundamental lemma of calculus of variation Euler,s theorem,Examples related to euler’s theorem
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Shortest distance, minimum surface of revolution Brachistochrone problem, Euler’s equation for one dependent function of one and several independent theorem Functional depending on ‘n’ dependent functions, Example based on functional depending on ‘n’ dependent functions
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Functional depending on higher order derivative Examples related to higher order derivative variational derivative Invariance of euler’s equation and related examples
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Natural boundary conditions isoperimetric problem geodesic
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes’ Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Transversality condition Conditional extremum under geometric constraints and under integral constraints Variable end points
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday

2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Test Free and constrained systems Constraints and their classification
5 Oct, 2022 9 Oct, 2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Holonomic and non holonomic systems Scleronomic and rheonomic systems Generalized coordinates Generalized potential Possible and virtual displacement Ideal constraints
13 Oct, 2022 16 Oct, 2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	General equation of dynamics Reaction Forces Lagrange's equation of first kind Principle of virtual displacements, D'Alembert principle Holonomic system independent coordinate
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Generalized forces Lagrange's equations of second kind Uniqueness of solution Theorem on variation of total energy Gyroscopic and dissipative forces
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Lagrange's equation for potential forces equation for conservative fields Hamilton's variables Don kin's theorem, Hamilton canonical equation
6 Nov, 2022	Sunday
2 nd Week 7 Nov - 12 Nov	Routh's equation Cyclic coordinates Poisson's bracket, poisson's identity
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday

3rd Week 14 Nov - 19 Nov	Jacobi poisson theorem Hamilton's principle Second form of hamilton's principle Poin care carton integral invariant
20 Nov, 2022	Sunday
4th Week 21 Nov - 26 Nov	Whittaker's equation Jacobi equation Principle of least action Canonical transformation Free canonical transformation Hamilton Jacobi equation
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Jacobi theorem Method of separation of variables for solving Hamilton –jacobi equation Testing the canonical character of a transformation
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3rd Week 12Dec - 17 Dec	Lagrange's bracket Condition of canonical character of a transformation Simplicial nature of a Jacobi matrix of a canonoical transformation Invariance of lagrange's brackets and Poisson brackets under canonical transformation Revision of syllabus
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Vandana Sharma

Class- M.Sc.(sem III)

Subject- Mathematics

Paper- Elasticity(MM-503)

September, 2022 1 st Week 1 Sept-3 Sept	Tensor, Properties of tensors, Isotropic tensors of different orders and relation between them.
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Symmetric and skew symmetric tensors. Tensor invariants, Deviatoric tensors, Eigen-values and eigen-vectors of a tensor.
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Symmetric and skew symmetric tensors. Tensor invariants, Deviatoric tensors, Eigen-values and eigen-vectors of a tensor.
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Divergence and curl of a vector / tensor field. Analysis of Strain : Affine transformation, Infinitesimal affine deformation.
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Examples based on theories. Test.
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday
2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Divergence and curl of a vector / tensor field. Analysis of Strain : Affine transformation, Infinitesimal affine deformation.
5 Oct,2022	Dussehra

9 Oct,2022	Sunday
2 nd Week 10 Oct - 15 Oct	General infinitesimal deformation. Saint-Venant's equations of compatibility. Finite deformations.
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Analysis of Stress : Stress Vector, Stress tensor, Equations of equilibrium, Transformation of coordinates.
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Mohr's circles, examples of stress. Equations of Elasticity : Generalised Hooks Law.
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Anisotropic symmetries, Homogeneous isotropic medium.
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Elasticity moduli for Isotropic media. Equilibrium and dynamic equations for an isotropic elastic solid.
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Strain energy function and its connection with Hooke's Law, Uniqueness of solution.
20 Nov, 2022	Sunday

4th Week 21 Nov - 26 Nov	Beltrami-Michell compatibility equations, problem discussion , test.
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Sessional Exam
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3rd Week 12Dec - 17 Dec	Clapeyron's theorem. Saint-Venant's principle. problem discussion, test.
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Monila Bansal

Class- M.Sc.(sem III)

Subject- Mathematics

Paper- Fluid Mechanics-I(MM-504)

September, 2022 1 st Week 1 Sept-3 Sept	An introduction to fluid dynamics Some basic definition of fluid mechanics Velocity at a point of a fluid Lagrangian and Eulerian methods Relationship between lagrangian and eulerian methods
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Stream lines,path lines and streak lines Vorticity and circulation Vortex lines Material derivative of fluid
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Acceleration of a fluid Significance of equation of continuity, Equation of continuity in vector form Equation of continuity in Cartesian form Equation of continuity by lagrangian method Equivalence relation between lagrangian and eulerian equation of continuity
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	General analysis of fluid motion Boundary surfaces and boundary surface conditions Properties of fluids-static and dynamic pressure Irrotational and rotational motion, velocity potential
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Reynolds transport theorem Euler's equation of motion Conservative forces Lagrange's equation of motion Bernouilli's theorem
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday

2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Application of Bernoulli's equation in one dimensional flow problems Kelvin circulation theorem Kelvin minimum energy theorem Vorticity equation
5 Oct, 2022 9 Oct, 2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Energy equation for incompressible flow Kinetic energy of irrotational flow Mean potential over spherical surface Kinetic energy of infinite liquid Uniqueness theorem
13 Oct, 2022 16 Oct, 2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Definition of real fluid and ideal fluid Stress component in a real fluid Relation between rectangular component of stress
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	Connection between stresses and gradients of velocity Navier stoke's equation of motion Steady flow between two parallel plates Plane poiseuille flow Couette flow
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	Reduction of navier stoke equation in flows having axis of symmetry Steady flow in circular pipe Hagen poiseuille flow
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Steady flow between two coaxial cylinders Flow between two concentric rotating cylinders
8 Nov, 2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Related examples Corollary of rotating cylinde Steady flow through tubes of uniform cross section

	Uniqueness theorem
20 Nov, 2022	Sunday
4th Week 21 Nov - 26 Nov	Ellipse cross section Equilateral triangle cross section
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Rectangular cross section under constant pressure Example based on coaxial cylinders Example based on stress strain relation
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3rd Week 12Dec - 17 Dec	Some important examples Revision of syllabus
3rd Week 15 Dec,2022 Onwards	University Examination

KVA DAV College for Women, Karnal

Lesson Plan for the Odd Semester (September to December, 2022)

Name of the Teacher – Monila Bansal

Class- M.Sc.(sem III)

Subject- Mathematics

Paper- Integral Equations(MM-505)

September, 2022 1 st Week 1 Sept-3 Sept	Definition of integral equation and their classifications Eigen values and eigen functions, Special kinds of kernel ,convolution integral The inner or scalar product of two functions
4 Sept, 2022	Sunday
2 nd Week 5 Sept- 10 Sept	Reduction to a system of algebraic equations Examples related to algebraic equation
11 Sept, 2022	Sunday
3 rd Week 12 Sept-17 Sept	Fredholm alternative Fredholm theorem Fredholm alternative theorem
18 Sept, 2022	Sunday
4 th Week 19 Sept-24 Sept	Approximate method Related examples Method of successive approximation
23 Sept,2022 25 Sept, 2022 26 Sept, 2022	Shaheedi Divas/ Haryana War Heroes' Martyrdom Day Sunday Maharana Agrasen Jayanti
5 th Week 27 Sept - 29 Sept	Iterative scheme for fredholm and volterra integral equation Conditions of uniform convergence and uniqueness of series solution Resolvent kernel and related examples Theorem based on resolvent kernel
30 Sept, 2022	Talent show
October, 2022 1 st Week 1 Oct,2022	Talent Show Holiday

2 Oct, 2022	Sunday
1 st Week 3 Oct - 8 Oct	Classical fredholm's theory,the method of solution fredholm equation Fredholm's first theorem Examples of Fredholm's first theorem
5 Oct,2022 9 Oct,2022	Dussehra Sunday
2 nd Week 10 Oct - 15 Oct	Fredholm's second theorem Fredholm's third theorem
13 Oct, 2022 16 Oct,2022	Karwa Chauth Sunday
3 rd Week 17 Oct - 21 Oct	Examples related to fredholm's theorem Symmetric kernels Complex Hilbert space Orthonormal system of functions Riesz –Fisher theorem
22 Oct - 26 Oct	Diwali Break
4 th Week 27 Oct - 31 Oct	A complete two dimensional orthonormal set over rectangle Fundamental properties of eigenvalues and eigen functions for symmetric kernels
30 Oct, 2022	Sunday
November, 2022 1 st Week 1 Nov, 2022	Haryana Day
1 st Week 2 Nov - 5 Nov	expansion in eigen functions and bilinear form Hilbert-schmidt theorem and some immediate consequences
6 Nov, 2022	Sunday
2 nd Week 7 Nov – 12 Nov	Definite kernels and Mercer's theorem Solution of a symmetric integral equation
8 Nov,2022 13 Nov, 2022	Sh. Guru Nanak Dev jayanti Sunday
3 rd Week 14 Nov - 19 Nov	Approximation of a general l_2 -kernel by a separable kernel The operator method in theory of integral equations Rayleigh-ritz method for finding the first eigen value Related examples
20 Nov, 2022	Sunday

4th Week 21 Nov - 26 Nov	Inversion formula for singular integral equation Cauchy's principal value for integral solution
27 Nov, 2022	Sunday
5th Week 28 Nov – 3 Dec	Cauchy type singular integral equation Closed and unclosed contours Riemann Hilbert problem The Hilbert –Kernel solution of the Hilbert type singular integral equation
4 Dec, 2022	Sunday
2nd Week 5 Dec - 10 Dec	Sessional Exams
11 Dec, 2022	Sunday
3rd Week 12Dec - 17 Dec	Revision of the syllabus
3rd Week 15 Dec,2022 Onwards	University Examination