

	DYAL SINGH COLLEGE, KARNAL
	Lesson Plan for Odd Semesters
	Algebra (BM-111)
	B.A /B.Sc. Sem 1
	Department of Mathematics
2021-22	
Oct 25-30,2021	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices. Elementary Operations on matrices.
Nov 8-13,2021	Rank of a matrices. Inverse of a matrix
Nov 15-20,2021	Ch. Equation of Matrix,
Nov 22-27,2021	Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix
Nov 29- Dec. 4,2021	Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix
Dec 6-11,2021	Cayley Hamilton theorem and its use in finding the inverse of a matrix.
Dec. 13-18,2021	Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations Theorems on consistency of a system of linear equations.
Dec 20-24, 2021	Unitary and Orthogonal Matrices, Bilinear and Quadratic forms.
Dec. 27,2021-Jan 1,2022	Transformation of equation
Jan 3-8,2022	Relations between the roots and coefficients of general polynomial equation in one variable ,Solutions of polynomial equations having conditions on roots
Jan. 10-12,2022	Common roots and multiple roots. Transformation of equations
Jan 17-22, 2022	Nature of the roots of an equation,Descarte's rule of signs.
Jan 24-29, 2022	Solutions of cubic equations (Cardon's method)
Jan 31,Febb 1-2, 2022	Biquadratic equations and their solutions.
Feb 7-12,2022	Problems discussed relevant to syllabus
Feb 14-19, 2022	Revision of syllabus, Unit Test
Feb 21-22,2022	Revision
	B.A/ B.Sc. – Ist Year (Semester – I)
	BM – 112 : Calculus
2021-22	
Oct 25-30,2021	Definition of the limit of a function. Basic properties of

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	limits, Continuous functions and classification of discontinuities.
Nov 8-13,2021	Differentiability, Successive differentiation, Leibnitz theorem
Nov 15-20,2021	Maclaurin and Taylor series expansions.
Nov 22-27,2021	Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes
Nov 29- Dec. 4,2021	Asymptotes in polar coordinates. Curvature, radius of curvature for Cartesian curves,
Dec 6-11,2021	Newton's method. Radius of curvature for pedal curves. Tangential polar equations.
Dec. 13-18,2021	Centre of curvature. Circle of curvature, Chord of curvature, evolutes
Dec 20-24, 2021	Tests for concavity and convexity, Points of inflexion, Multiple points.
Dec. 27,2021-Jan 1,2022	Cusps, nodes & conjugate points. Type of cusps.
Jan 3-8,2022	Tracing of curves in Cartesian, parametric and polar coordinates.
Jan. 10-12,2022	Reduction formulae, Rectification
Jan 17-22, 2022	Rectification (continued), intrinsic equations of curve,
Jan 24-29, 2022	Quadrature (area) Sectorial area, Area bounded by closed curves
Jan 31, Feb 1-2, 2022	Volumes and surfaces of solids of revolution. Theorems of Pappu's and Guilden.
Feb 7-12,2022	Revision and unit test
Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision
	B.A./B.Sc.– Ist Year (Semester – I) BM – 113 : Solid Geometry
2021-22	
Oct 25-30,2021	General equation of second degree.
Nov 8-13,2021	Tracing of conics
Nov 15-20,2021	Tangent at any point to the conic, chord of contact,
Nov 22-27,2021	Pole of line to the conic, director circle of conic. System of conics.
Nov 29- Dec. 4,2021	Confocal conics, Polar equation of a conic, tangent and normal to the conic.
Dec 6-11,2021	Sphere, Plane section of a sphere.
Dec. 13-18,2021	Sphere through a given circle, Intersection of two spheres, radical plane of two spheres.
Dec 20-24, 2021	Co-oxal system of spheres
Dec. 27,2021-	Cones, Right circular cone,

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Jan 1, 2022		
Jan 3-8, 2022	Enveloping cone and reciprocal cone	
Jan. 10-12, 2022	Cylinder: Right circular cylinder and enveloping cylinder	
Jan 17-22, 2022	Central Conicoids, Equation of tangent plane	
Jan 24-29, 2022	Director sphere. Normal to the conicoids.	
Jan 31, Feb 1-2, 2022	Polar plane of a point, Enveloping cone of a conicoid	
Feb 7-12, 2022	Enveloping cylinder of a conicoid	
Feb 14-19, 2022	Generating lines, Confocal conicoid, Reduction of second degree equations, Revision and unit test	
Feb 21-22, 2022	Revision	
	B.A/B.Sc- IIInd Year (Semester-III)	
	BM-231 Advanced Calculus	
2021-22		
Oct 25-30, 2021	Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity	
Nov 8-13, 2021	Chain rule of differentiability, Mean value theorems	
Nov 15-20, 2021	Rolle's Theorem and Lagrange's mean value theorem and their geometrical interpretations.	
Nov 22-27, 2021	Taylor's Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives	
Nov 29- Dec. 4, 2021	Indeterminate forms.	
Dec 6-11, 2021	Limit and continuity of real valued functions of two variables. Partial differentiation, Total Differentials, Composite functions & implicit functions	
Dec. 13-18, 2021	Change of variables. Homogenous functions & Euler's theorem on homogeneous functions.	
Dec 20-24, 2021	Differentiability of real valued functions of two variables. Schwarz and Young's theorem	
Dec. 27, 2021-Jan 1, 2022	Implicit function theorem. Maxima, Minima and saddle points of two variables	
Jan 3-8, 2022	Lagrange's method of multipliers.	
Jan. 10-12, 2022	Curves: Tangents, Principal normals, Binormals, Serret-Frenet formulae. Locus of the centre of curvature	
Jan 17-22, 2022	Spherical curvature, Locus of centre of Spherical curvature	
Jan 24-29, 2022	Involutes, evolutes, Bertrand Curves. Surfaces: Tangent planes, one parameter family of surfaces, Envelopes.	
Jan 31, Feb 1-2, 2022	Revision and unit test	
Feb 7-12, 2022	Revision	

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Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision
	B.A./B.Sc.- 2nd Year (Semester3) BM – 232 : Partial Differential Equation
2021-22	
Oct 25-30,2021	Formation, order and degree of Partial Differential Equation
Nov 8-13,2021	Linear and Non-Linear Partial Differential Equation
Nov 15-20,2021	Complete solution, singular solution
Nov 22-27,2021	General solution, Solution of Lagrange's linear equations,
Nov 29- Dec. 4,2021	Charpit's general method of solution. Compatible systems of first order equations, Jacobi's method.
Dec 6-11,2021	Linear partial differential equations of second and higher orders,
Dec. 13-18,2021	Linear and non-linear homogeneous and non-homogeneous equations with constant coefficients, Partial differential equation with variable coefficients reducible to equations with constant coefficients, their complimentary functions and particular Integrals
Dec 20-24, 2021	Equations reducible to linear equations with constant coefficients.
Dec. 27,2021-Jan 1,2022	Classification of linear partial differential equations of second order, Hyperbolic,
Jan 3-8,2022	Classification of linear partial differential equations of second order,parabolic and elliptic types
Jan. 10-12,2022	Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.
Jan 17-22, 2022	Cauchy's problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation
Jan 24-29, 2022	Method of separation of variables: Solution of Laplace's equation, Wave equation
Jan 31,Febb 1-2, 2022	Diffusion (Heat) equation (one and two dimension)
Feb 7-12,2022	Revision and unit test
Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision

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B.A./B.Sc.- 2nd Year (Semester3)	
BM – 233 : Statics	
2021-22	
Oct 25-30,2021	Composition and resolution of forces
Nov 8-13,2021	Parallel forces
Nov 15-20,2021	Moments
Nov 22-27,2021	Couples.
Nov 29- Dec. 4,2021	Analytical conditions of equilibrium of coplanar forces.
Dec 6-11,2021	Friction.
Dec. 13-18,2021	Centre of Gravity.
Dec 20-24, 2021	Virtual work.
Dec. 27,2021-Jan 1,2022	Forces in three dimensions.
Jan 3-8,2022	Poinsots central axis.
Jan. 10-12,2022	Wrenches.
Jan 17-22, 2022	Null lines and planes.
Jan 24-29, 2022	Stable and unstable equilibrium.
Jan 31,Febb 1-2, 2022	Revision and unit test
Feb 7-12,2022	Revision and unit test
Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision
B.A./B.Sc.3rd Year (Semester 5th)	
BM –351 : Real Analysis	
2021-22	
Oct 25-30,2021	Riemann integral
Nov 8-13,2021	Integrability of continuous and monotonic functions
Nov 15-20,2021	The Fundamental theorem of integral calculus, Mean value theorems of integral calculus.
Nov 22-27,2021	Improper integrals and their convergence
Nov 29- Dec. 4,2021	Abel's and Dirichlet's tests,
Dec 6-11,2021	Frullani's integral, Integral as a function of a parameter
Dec. 13-18,2021	Differentiability and integrability of an integral of a function of a parameter.
Dec 20-24, 2021	Definition and examples of metric spaces, neighborhoods, limit points
Dec. 27,2021-Jan 1,2022	Interior points, open and closed sets,

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Jan 3-8,2022	Closure and interior, boundary points, subspace of a metric space,
Jan. 10-12,2022	Equivalent metrics, Cauchy sequences,
Jan 17-22, 2022	Completeness, Cantor's intersection theorem, Baire's category theorem, contraction Principle
Jan 24-29, 2022	Continuous functions, uniform continuity
Jan 31,Febb 1-2, 2022	Sequential compactness, Bolzano-Weierstrassproperty,continuity in relation with connectedness.
Feb 7-12,2022	Revision and unit test
Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision
	B.A./B.Sc.3rd Year (Semester 5th)
	BM –352 : Groups and Rings
2021-22	
Oct 25-30,2021	Definition of a group with example and simple properties of groups
Nov 8-13,2021	Subgroups and Subgroup criteria
Nov 15-20,2021	Generation of groups, cyclic groups,
Nov 22-27,2021	Cosets, Left and right cosets, Index of a sub-group
Nov 29- Dec. 4,2021	Coset decomposition, Lagrange's theorem and its consequences,
Dec 6-11,2021	Normal subgroups, Quotient groups,
Dec. 13-18,2021	Homomorphisms, isomorphisms
Dec 20-24, 2021	automorphisms and inner automorphisms of a group
Dec. 27,2021-Jan 1,2022	Automorphisms of cyclic groups,
Jan 3-8,2022	Permutations groups. Even and odd permutations,Alternating groups
Jan. 10-12,2022	Cayley's theorem, Center of a group and derived group of a group.
Jan 17-22, 2022	Introduction to rings, subrings, integral domains and fields,
Jan 24-29, 2022	Characteristics of a ring. Ring homomorphisms, ideals
Jan 31,Febb 1-2, 2022	Euclidean rings, Polynomial rings, Polynomials over the rational field
Feb 7-12,2022	Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$
Feb 14-19, 2022	Revision and unit test
Feb 21-22,2022	Revision
	B.A./B.Sc.3rd Year (Semester 5th)
	BM –353 : Numerical Analysis

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2021-22	
Oct 25-30,2021	Finite Differences operators and their relations. Finding the missing terms and effect of error in a difference tabular values
Nov 8-13,2021	Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae.
Nov 15-20,2021	Interpolation with unequal intervals: Newton's divided difference
Nov 22-27,2021	Lagrange's Interpolation formulae, Hermite Formula.
Nov 29- Dec. 4,2021	Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula.
Dec 6-11,2021	Probability distribution of random variables, Binomial distribution,
Dec. 13-18,2021	Poisson's distribution, Normal distribution: Mean, Variance and Fitting.
Dec 20-24, 2021	Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections –I & II.
Dec. 27,2021-Jan 1,2022	Eigen Value Problems: Power method, Jacobi's method, Given's method, HouseHolder's method, QR method, Lanczos method.
Jan 3-8,2022	Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one- third and three-eighth rule
Jan. 10-12,2022	Single step methods Picard's method. Taylor's series method, Euler's method, Runge-Kutta Methods.
Jan 17-22, 2022	Multiple step methods; Predictor-corrector method,
Jan 24-29, 2022	Modified Euler's method, Milne-Simpson's method.
Jan 31, Feb 1-2, 2022	Revision and unit test
Feb 7-12,2022	Revision and unit test
Feb 14-19, 2022	Revision
Feb 21-22,2022	Revision
	Lesson plan for even semester B.A./B.Sc. Ist Year (Semester 2nd) BM –121 : Number Theory and Trigonometry
Even Sem 2021-22	
April 1-2, 2022	Divisibility, G.C.D.(greatest common divisors),

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	L.C.M.(least common multiple)	
April 4-9,2022	Primes, Fundamental Theorem of Arithmetic.	
April 11- 16,2022	Linear Congruences, Fermat's theorem.	
April 18-23 ,2022	Wilson's theorem and its converse.	
April 25-30,2022	Linear Diophantine equations in two variables	
May 2-7,2022	Complete residue system and reduced residue system modulo m. Euler function Euler's generalization of Fermat's theorem	
May 9-14,2022	Chinese Remainder Theorem. Quadratic residues. Legendre symbols.	
May 16-21,2022	Lemma of Gauss; Gauss reciprocity law. Greatest integer function $[x]$.	
May 23-28,2022	The number of divisors and the sum of divisors of a natural number n (The functions $d(n)$ and $s(n)$). Moebius function and Moebius inversion formula.	
May 30-31, June 1-4, 2022	De Moivre's Theorem and its Applications.	
June 6-11,2022	Expansion of trigonometrical functions. Direct circular and hyperbolic functions and their properties.	
June 13- 16,2022	Inverse circular and hyperbolic functions and their properties.	
June 13-18,2022	Gregory's series. Summation of Trigonometry series	
June 20-25, 2022	Revision	
June 27-30, July 1-2,2022	Unit Test	
July 4-9,2022	Revision	
	B.A./B.Sc. IstYear (Semester 2nd) BM -122: Ordinary Differential Equations	
Even Sem		
2021-22		
April 1-2, 2022	Geometrical meaning of a differential equation. Exact differential equations	
April 4-9,2022	Integrating factors. First order higher degree equations solvable for x,y,p	
April 11- 16,2022	Lagrange's equations,	
April 18-23 ,2022	Clairaut's equations. Equation reducible to Clairaut's form. Singular solutions.	
April 25-30,2022	Orthogonal trajectories in Cartesian coordinates and polar coordinates	
May 2-7,2022	Self orthogonal family of curves.. Linear differential equations with constant coefficients.	
May 9-14,2022	Homogeneous linear ordinary differential equations. Equations reducible to homogeneous	
May 16-21,2022	Linear differential equations of second order,Reduction	

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	to normal form.	
May 23-28,2022	Transformation of the equation by changing the dependent variable/ the independent variable	
May 30-31, June 1-4, 2022	Solution by operators of non-homogeneous linear differential equations.	
June 6-11,2022	Reduction of order of a differential equation. Method of variations of parameters. Method of undetermined coefficients.	
June 13- 16,2022	Ordinary simultaneous differential equations. Solution of simultaneous differential equations involving operators $x (d/dx)$ or $t (d/dt)$ etc	
June 13-18,2022	Simultaneous equation of the form $dx/P = dy/Q = dz/R$. Total differential equations.	
June 20-25, 2022	Condition for $Pdx + Qdy + Rdz = 0$ to be exact	
June 27-30, July 1-2,2022	Revision	
July 4-9,2022	Revision	
	B.A./B.Sc. IstYear (Semester 2nd) BM –123:Vector Calculus	
Even Sem		
2021-22		
April 1-2, 2022	Scalar and vector product of three vectors,	
April 4-9,2022	Product of four vectors. Reciprocal vectors.	
April 11- 16,2022	Vector differentiation Scalar Valued point functions,	
April 18-23 ,2022	Vector valued point functions, derivative along a curve, directional derivatives	
April 25-30,2022	Gradient of a scalar point function, geometrical interpretation of $\text{grad } F$,	
May 2-7,2022	Character of gradient as a point function	
May 9-14,2022	Divergence and curl of vector point function, characters of $\text{Div } f$ and $\text{Curl } f$ as point function, examples.	
May 16-21,2022	Gradient, divergence and curl of sums and product and their related vector identities.	
May 23-28,2022	Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors	
May 30-31, June 1-4, 2022	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates	
June 6-11,2022	Cylindrical co-ordinates and Spherical coordinates.	
June 13- 16,2022	Vector integration, Line integral, Surface integral, Volume integral	
June 13-18,2022	Theorems of Gauss, Green & Stokes	
June 20-25, 2022	Revision	

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June 27-30, July 1-2, 2022	Unit Test
July 4-9, 2022	Revision
	B.A./B.Sc. 2nd Year (Semester 4th)
	BM –241: Sequence and Series
2021-22	
April 1-2, 2022	Boundedness of the set of real numbers, least upper bound, greatest lower bound of a set,
April 4-9, 2022	Neighborhoods, interior points, isolated points, limit points
April 11- 16, 2022	Open sets, closed set, interior of a set, closure of a set in real numbers and their properties.
April 18-23 ,2022	Bolzano- Weierstrass theorem, Open covers, Compact sets and Heine-Borel Theorem
April 25-30, 2022	Sequence: Real Sequences and their convergence,
May 2-7, 2022	Theorem on limits of sequence, Bounded and monotonic sequences, Cauchy's sequence,
May 9-14, 2022	Cauchy general principle of convergence, Subsequences, Subsequential limits
May 16-21, 2022	Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series
May 23-28, 2022	Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series,
May 30-31, June 1-4, 2022	Infinite series: D-Alembert's ratio test, Raabe's test,
June 6-11, 2022	Logarithmic test, de Morgan and Bertrand's test,
June 13- 16, 2022	Cauchy's Nth root test, Gauss Test, Cauchy's integral test, Cauchy's condensation test, Alternating series, Leibnitz's test, absolute and conditional convergence,
June 13-18, 2022	Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test, Insertion and removal of parenthesis, Dirichlet's theorem, Riemann's Re-arrangement theorem, Pringsheim's theorem
June 20-25, 2022	Revision
June 27-30, July 1-2, 2022	Unit Test
July 4-9, 2022	revision
	B.A./B.Sc. 2nd Year (Semester 4th)
	BM –242: Special Functions and Integral Transforms
Even Sem	

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2021-22	
April 1-2, 2022	Power series method
April 4-9,2022	Definitions of Beta and Gamma functions. Bessel equation and its solution
April 11- 16,2022	Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions.
April 18-23 ,2022	Legendre and Hermite differentials equations and their solutions
April 25-30,2022	Legendre and Hermite functions and their properties-Recurrence Relations and generating functions
May 2-7,2022	Orthogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre & Hermite Polynomials
May 9-14,2022	Laplace Integral Representation of Legendre polynomial.
May 16-21,2022	Laplace Transforms – Existence theorem for Laplace transforms,
May 23-28,2022	Shifting theorems, Laplace transforms of derivatives and integrals,
May 30-31, June 1-4, 2022	Convolution theorem, Inverse Laplace transforms, convolution theorem
June 6-11,2022	Inverse Laplace transforms of derivatives and integrals,
June 13- 16,2022	Fourier transform, Linearity property, Shifting, Modulation, Convolution
June 13-18,2022	Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform,Parseval's identity for Fourier transforms,
June 20-25, 2022	Revision
June 27-30, July 1-2,2022	Unit Test
July 4-9,2022	Revision
	B.A./B.Sc. 2ndYear (Semester 4th) BM –243: Programming in C & Numerical Methods
Even Sem	
2021-22	
April 1-2, 2022	Programmer's model of a computer,
April 4-9,2022	Algorithms, Flow charts, Data types,
April 11- 16,2022	Operators and expressions, Input / outputs functions.
April 18-23 ,2022	Decisions control structure,Decision statements,
April 25-30,2022	Implementation of Loops, Switch Statement & Case control structures
May 2-7,2022	Functions, Preprocessors and Arrays.
May 9-14,2022	Strings: Character Data Type, Standard String handling

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	Functions
May 16-21,2022	Arrays in Structures. Pointers: Pointers Data type, Pointers and Arrays, Pointers and Functions.
May 23-28,2022	Bisection method,
May 30-31, June 1-4, 2022	Regula-Falsi method, Secant method
June 6-11,2022	Newton-Raphson's method. Newton's iterative method for finding pth root of a number,
June 13- 16,2022	Order of convergence of above methods.
June 13-18,2022	Gauss-elimination method, Gauss-Jordan method, Triangularization method (LU decomposition method). Crout's method, Cholesky Decomposition method.
June 20-25, 2022	Revision
June 27-30, July 1-2,2022	Unit Test
July 4-9,2022	Revision
	B.A./B.Sc. 3rd Year (Semester 6th)
	BM –361 Real and complex Analysis
Even Sem	
2021-22	
April 1-2, 2022	Jacobians, Beta and Gama functions,
April 4-9,2022	Double and Triple integrals,
April 11- 16,2022	Dirichlets integrals, change of order of integration in double integrals.
April 18-23 ,2022	Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Coefficients,
April 25-30,2022	Dirichlet's conditions, Parseval's identity for Fourier series
May 2-7,2022	Fourier series for even and odd functions, Half range series, Change of Intervals.
May 9-14,2022	Extended Complex Plane, Stereographic projection of complex numbers
May 16-21,2022	Continuity and differentiability of complex functions, Analytic functions
May 23-28,2022	Cauchy-Riemann equations. Harmonic functions.
May 30-31, June 1-4, 2022	Mappings by elementary functions
June 6-11,2022	Translation, rotation, Magnification and Inversion.
June 13- 16,2022	Conformal Mappings
June 13-18,2022	Mobius transformations, Fixed points, Cross ratio, Inverse Points and critical mappings
June 20-25, 2022	Revision
June 27-30, July 1-	Unit Test

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2,2022	
July 4-9,2022	revision
	B.A./B.Sc. 3rdYear (Semester 6th)
	BM –362 Linear Algebra
Even Sem	
2021-22	
April 1-2, 2022	Vector spaces, subspaces, Sum and Direct sum of subspaces,
April 4-9,2022	Linear span, Linearly Independent and dependent subsets of a vector space
April 11- 16,2022	Finitely generated vector space, Existence theorem for basis of a finitely generated vector space
April 18-23 ,2022	Finite dimensional vector spaces, Invariance of the number of elements of bases sets,
April 25-30,2022	Dimensions, Quotient space and its dimension.
May 2-7,2022	Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces
May 9-14,2022	Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimensional vector spaces
May 16-21,2022	Null Space, Range space of a linear transformation, Rank and Nullity Theorem
May 23-28,2022	Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations
May 30-31, June 1-4, 2022	Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformations
June 6-11,2022	Inner product spaces, Cauchy-Schwarz inequality
June 13- 16,2022	Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis
June 13-18,2022	Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt Orthogonalization process, Adjoint of a linear transformation, Unitary linear transformations
June 20-25, 2022	Revision
June 27-30, July 1-2,2022	Unit Test
July 4-9,2022	Revision
	B.A./B.Sc. 3rdYear (Semester 6th)
	BM –363 Dynamics
Even Sem	

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2021-22	
April 1-2, 2022	Velocity and acceleration along radial, transverse
April 4-9, 2022	Tangential and normal directions
April 11- 16, 2022	Relative velocity and acceleration.
April 18-23 ,2022	Simple harmonic motion. Elastic strings.
April 25-30, 2022	Mass, Momentum and Force
May 2-7, 2022	Newton's laws of motion.
May 9-14, 2022	Work, Power and Energy.
May 16-21, 2022	Definitions of Conservative forces and Impulsive forces
May 23-28, 2022	Motion on smooth and rough plane curves
May 30-31, June 1-4, 2022	Projectile motion of a particle in a plane.
June 6-11, 2022	Vector angular velocity
June 13- 16, 2022	General motion of a rigid body
June 13-18, 2022	Central Orbits, Kepler laws of motion, Motion of a particle in three dimensions.
June 20-25, 2022	Revision
June 27-30, July 1-2, 2022	Unit Test
July 4-9, 2022	Revision

	DYALSINGH COLLEGE, KARNAL
	Lesson Plan for Odd Semester
	BC-105, BUSINESS MATHEMATICS-I
	B.Com Semester-1 (Gen/Hons.)
	Department of Mathematics
2021-22	
Oct 25-30, 2021	Logarithms, Anti-logarithms.
Nov 8-13, 2021	Sequences and Series: Arithmetic progression
Nov 15-20, 2021	Geometric Progressions
Nov 22-27, 2021	Differentiation: Idea of simple derivative of different functions
Nov 29-Dec. 4, 2021	Rules of differentiation (simple standard forms).
Dec 6-11, 2021	Maxima and Minima of functions of one variable relating to cost
Dec. 13-18, 2021	Maxima and Minima of functions of one variable relating to revenue and profit.

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Dec 20-24,2021	Matrices and Determinants: concept of matrix, types, and algebra of matrices
Dec. 27,2021-Jan1,2022	Properties of determinants
Jan3-8,2022	Adjoint of a matrix, elementary row or column operations
Jan.10-12,2022	Finding inverse of a matrix through adjoint
Jan17-22,2022	Solution of a system of linear equations having unique solution
Jan24-29,2022	Compound Interest
Jan31, Feb 1-2, 2022	Annuities: different types of interest rates, concept of present value and amount of a sum
Feb7-12,2022	Valuation of simple loans and debentures; problems relating to sinking funds
Feb14-19,2022	Revision
Feb21-22,2022	Revision

	DYALSINGH COLLEGE, KARNAL
	Lesson Plan for Odd Semester
	BCA-115 Mathematical Foundations – I
	BCA (First sem.)
	Department of Mathematics
2021-22	
Oct25-30,2021	Set, subsets and operations on sets
Nov 8-13,2021	Venn diagram of sets
Nov 15-20,2021	Power set of a set Equivalence relation on a set and partition of a set
Nov 22-27,2021	Permutation and combinations,
Nov29-Dec. 4,2021	Partially ordered sets, Lattices (definition and examples)
Dec6-11,2021	Boolean algebra (definition and examples)
Dec.13-18,2021	Epsilon and delta definition of the continuity of a function of a single variable
Dec 20-24,2021	Basic properties of limits

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Dec. 27,2021- Jan1,2022	Continuous functions and classifications of discontinuities
Jan3-8,2022	Derivative of a function, Derivatives of Logarithmic
Jan.10-12,2022	Formation of differential equations order and degree of the differential equation,
Jan17-22,2022	Geometrical approach to the existence of the solution of the differential equation
Jan24-29,2022	Ordinary differential equations of first degree and the first order, exact differential equations
Jan31,Febb1-2, 2022	Linear differential equations of higher order with constant coefficients
Feb7-12,2022	Applications of differential equations to geometry
Feb14-19,2022	revision and unit test
Feb21-22,2022	Revision

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