	DYAL SINGH COLLEGE,KARNAL
	Lesson Plan for Odd Semesters
	Algebra (BM-111)
	B.A /B.Sc. Semester-1
	Department of Mathematics
2019-20	
July 16-20,2019	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices, Elementary Operations on matrices.
July 22-27,2019	Rank of a matrices, Inverse of a matrix
July 29- Aug 3, 2019	Ch. Equation of Matrix,
Aug 5-10,2019	Linear dependence and independence of rows and columns of matrices, Row rank and column rank of a matrix
Aug 12-17, 2019	Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix
Aug 19-24, 2019	Cayley Hamilton theorem and its use in finding the inverse of a matrix.
Aug 26-31, 2019	Applications of matrices to a system of linear (both homogeneous and non–homogeneous) equations, Theorems on consistency of a system of linear equations.
Sep 2-7, 2019	Unitary and Orthogonal Matrices, Bilinear and Quadratic forms.
Sep 9-14, 2019	Transformation of equations
Sep 16-21, 2019	Relations between the roots and coefficients of general polynomial equation in one variable,Solutions of polynomial equations having conditions on roots
Sep 24-28, 2019	Common roots and multiple roots, Transformation of equations
Sep 30- Oct 5, 2019	Nature of the roots of an equation,Descarte's rule of signs.
Oct 7-12, 2019	Solutions of cubic equations (Cardon's method)
Oct 14- 19, 2019	Biquadratic equations and their solutions.
Oct 21-23, 2019	Problems discussed relevent to syllabus
	B.A/ B.Sc. – first Year (Semester – I) **BM – 112 : Calculus**
2019-20	
July 16-20,2019	Definition of the limit of a function. Basic properties of limits, Continuous functions and classification of discontinuities.
July 22-27,2019	Differentiability, Successive differentiation, Leibnitz theorem
July 29- Aug 3, 2019	Maclaurin and Taylor series expansions.
Aug 5-10,2019	Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes

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Aug 12-17, 2019	Asymptotes in polar coordinates. Curvature, radius of curvature for Cartesian curves,
Aug 19-24, 2019	Newton's method, Radius of curvature for pedal curves. Tangential polar equations.
Aug 26-31, 2019	Centre of curvature. Circle of curvature,Chord of curvature, evolutes
Sep 2-7, 2019	Tests for concavity and convexity, Points of inflexion. Multiple points.
Sep 9-14, 2019	Cusps,nodes & conjugate points, Type of cusps.
Sep 16-21, 2019	Tracing of curves in Cartesian, parametric and polar co-ordinates.
Sep 24-28, 2019	Reduction formulae,Rectification
Sep 30- Oct 5, 2019	Rectification(continued), intrinsic equations of curve,
Oct 7-12, 2019	Quadrature(area) Secotorial area,Area bounded by closed curves
Oct 14- 19, 2019	Volumes and surfaces of solids of revolution, Theorems of Pappu's and Guilden.
Oct 21-23, 2019	Revision and unit test
	B.A./B.Sc.– First Year (Semester – I) **BM – 113 : Solid Geometry**
2019-20	
July 16-20,2019	General equation of second degree.
July 22-27,2019	Tracing of conics
July 29- Aug 3, 2019	Tangent at any point to the conic, chord of contact,
Aug 5-10,2019	Pole of line to the conic, director circle of conic. System of conics.
Aug 12-17, 2019	Confocal conics. Polar equation of a conic, tangent and normal to the conic.
Aug 19-24, 2019	Sphere: Plane section of a sphere.
Aug 26-31, 2019	Sphere through a given circle. Intersection of two spheres, radical plane of two spheres.
Sep 2-7, 2019	Co-oxal system of spheres
Sep 9-14, 2019	Cones, Right circular cone,
Sep 16-21, 2019	Enveloping cone and reciprocal cone.
Sep 24-28, 2019	Cylinder: Right circular cylinder and enveloping cylinder
Sep 30- Oct 5, 2019	Central Conicoids: Equation of tangent plane
Oct 7-12, 2019	Director sphere, Normal to the conicoids.
Oct 14- 19, 2019	Polar plane of a point, Enveloping cone of a coincoid
Oct 21-23, 2019	Enveloping cylinder of a conicoid, Generating lines, Confocal conicoid, Reduction of second degree equations
	B.A/B.Sc- IInd Year (Semester-III)
	BM-231 Advanced Calculus

2019-20	
July 16-20,2019	Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity
July 22-27,2019	Chain rule of differentiability, Mean value theorems
July 29- Aug 3, 2019	Rolle's Theorem and Lagrange's mean value theorem and their geometrical interpretations.
Aug 5-10,2019	Taylor's Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives
Aug 12-17, 2019	Indeterminate forms.
Aug 19-24, 2019	Limit and continuity of real valued functions of two variables. Partial differentiation, Total Differentials, Composite functions & implicit functions
Aug 26-31, 2019	Change of variables, Homogenous functions & Euler's theorem on homogeneous functions.
Sep 2-7, 2019	Differentiability of real valued functions of two variables. Schwarz and Young's theorem
Sep 9-14, 2019	Implicit function theorem, Maxima, Minima and saddle points of two variables
Sep 16-21, 2019	Lagrange's method of multipliers.
Sep 24-28, 2019	Curves: Tangents, Principal normal, Binomals, Serret-Frenet formulae. Locus of the centre of curvature
Sep 30- Oct 5, 2019	Spherical curvature, Locus of centre of Spherical curvature,
Oct 7-12, 2019	Involutes, evolutes, Bertrand Curves. Surfaces: Tangent planes, one parameter family of surfaces, Envelopes.
Oct 14- 19, 2019	Revision and unit test
Oct 21-23, 2019	Revision
	B.A./B.Sc.- 2nd Year (Semester3) **BM – 232 : Partial Differential Equation**
2019-20	
July 16-20,2019	Formation, order and degree of partial differential equation
July 22-27,2019	Linear and Non-Linear Partial Differential Equation
July 29- Aug 3, 2019	Complete solution, singular solution
Aug 5-10,2019	General solution, Solution of Lagrange's linear equations,
Aug 12-17, 2019	Charpit's general method of solution, Compatible systems of first order equations, Jacobi's method.
Aug 19-24, 2019	Linear partial differential equations of second and higher orders,
Aug 26-31, 2019	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

Sep 2-7, 2019	Equations reducible to linear equations with constant coefficients.
Sep 9-14, 2019	Classification of linear partial differential equations of second order, Hyperbolic,
Sep 16-21, 2019	Classification of linear partial differential equations of second order,parabolic and elliptic types
Sep 24-28, 2019	Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.
Sep 30- Oct 5, 2019	Cauchy' s problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation
Oct 7-12, 2019	Method of separation of variables: Solution of Laplace's equation, Wave equation
Oct 14- 19, 2019	Diffusion (Heat) equation (one and two dimension)
Oct 21-23, 2019	Revision and unit test
	B.A./B.Sc.- 2nd Year (Semester3) **BM – 233 : Statics**
2019-20	
July 16-20,2019	Composition and resolution of forces
July 22-27,2019	Parallel forces
July 29- Aug 3, 2019	Moments
Aug 5-10,2019	Couples.
Aug 12-17, 2019	Analytical conditions of equilibrium of coplanar forces.
Aug 19-24, 2019	Friction.
Aug 26-31, 2019	Centre of Gravity.
Sep 2-7, 2019	Virtual work.
Sep 9-14, 2019	Forces in three dimensions.
Sep 16-21, 2019	Poinsots central axis.
Sep 24-28, 2019	Wrenches.
Sep 30- Oct 5,2019	Null lines and planes.
Oct 7-12, 2019	Stable and unstable equilibrium.
Oct 14- 19, 2019	Revision and unit test
Oct 21-23, 2019	Revision and unit test
	B.A./B.Sc.3rd Year (Semester 5th) **BM –351 : Real Analysis**
2019-20	
July 16-20,2019	Riemann integral
July 22-27,2019	Integrabililty of continuous and monotonic functions
July 29- Aug 3, 2019	The Fundamental theorem of integral calculus.Mean value theorems of integral calculus.
Aug 5-10,2019	Improper integrals and their convergence
Aug 12-17, 2019	Abel's and Dirichlet's tests,
Aug 19-24, 2019	Frullani's integral, Integral as a function of a parameter
Aug 26-31, 2019	Differentiability and integrability of an integral of a

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	function of a parameter.
Sep 2-7, 2019	Definition and examples of metric spaces, neighborhoods, limit points
Sep 9-14, 2019	Interior points, open and closed sets,
Sep 16-21, 2019	Closure and interior, boundary points, subspace of a metric space,
Sep 24-28, 2019	Equivalent metrics, Cauchy sequences
Sep 30- Oct 5, 2019	Completeness, Cantor's intersection theorem, Baire's category theorem, contraction Principle
Oct 7-12, 2019	Continuous functions, uniform continuity
Oct 14- 19, 2019	Sequential compactness, Bolzano-Weierstrass property,continuity in relation with connectedness.
Oct 21-23, 2019	Revision and unit test
	B.A./B.Sc.3rd Year (Semester 5th) **BM –352 : Groups and Rings**
2019-20	
July 16-20,2019	Definition of a group with example and simple properties of groups
July 22-27,2019	Subgroups and Subgroup criteria
July 29- Aug 3, 2019	Generation of groups, cyclic groups,
Aug 5-10,2019	Cosets, Left and right cosets, Index of a sub-group
Aug 12-17, 2019	Coset decomposition, Langrange's theorem and its consequences,
Aug 19-24, 2019	Normal subgroups, Quotient groups,
Aug 26-31, 2019	Homomorphisms, isomophisms
Sep 2-7, 2019	Automorphisms and inner automorphisms of a group
Sep 9-14, 2019	Automorphisms of cyclic groups,
Sep 16-21, 2019	Permutations groups, Even and odd permutations,Alternating groups
Sep 24-28, 2019	Cayley's theorem, Center of a group and derived group of a group.
Sep 30- Oct 5, 2019	Introduction to rings, subrings, integral domains and fields,
Oct 7-12, 2019	Characteristics of a ring. Ring homomorphisms, ideals
Oct 14- 19, 2019	Euclidean rings, Polynomial rings, Polynomials over the rational field
Oct 21-23, 2019	Unique factorization domain, R unique factorization domain implies so is R[X1 , X2.....Xn]
	B.A./B.Sc.3rd Year (Semester 5th) **BM –353 : Numerical Analysis**
2019-20	
July 16-20,2019	Finite Differences operators and their relations. Finding the missing terms and effect of error in a difference tabular values

July 22-27,2019	Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae.
July 29- Aug 3, 2019	Interpolation with unequal intervals: Newton's divided difference
Aug 5-10,2019	Lagrange's Interpolation formulae, Hermite Formula.
Aug 12-17, 2019	Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula.
Aug 19-24, 2019	Probability distribution of random variables, Binomial distribution,
Aug 26-31, 2019	Poisson's distribution, Normal distribution: Mean, Variance and Fitting.
Sep 2-7, 2019	Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections –I & II.
Sep 9-14, 2019	Eigen Value Problems: Power method, Jacobi's method, Given's method, Householder's method, QR method, Lanczos method.
Sep 16-21, 2019	Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one- third and three-eighth rule
Sep 24-28, 2019	Single step methods, Picard's method. Taylor's series method, Euler's method, Runge-Kutta Methods.
Sep 30- Oct 5,2019	Multiple step methods, Predictor-corrector method,
Oct 7-12, 2019	Modified Euler's method,Milne-Simpson's method.
Oct 14- 19, 2019	Revision and unit test
Oct 21-23, 2019	Revision and unit test
	Lesson plan for even semester **B.A./B.Sc. IstYear (Semester 2nd)** **BM –121 : Number Theory and Trignometry**
Even Sem	
2019-20	
Jan 1-4, 2020	Divisibility, G.C.D.(greatest common divisors), L.C.M.(least common multiple)
Jan 6-11, 2020	Primes, Fundamental Theorem of Arithmetic.
Jan 13-18, 2020	Linear Congruences, Fermat's theorem.
Jan 20-25,2020	Wilson's theorem and its converse.
Jan 27- Feb 1,2020	linear Diophanatine equations in two variables
Feb 3-8, 2020	Complete residue system and reduced residue system modulo m, Euler function Euler's generalization of Fermat's theorem
Feb 10-15, 2020	Chinese Remainder Theorem, Quadratic residues. Legendre symbols.
Feb 17-22, 2020	Lemma of Gauss, Gauss reciprocity law. Greatest integer function [x].

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Feb 24-29, 2020	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.
March 2-7, 2020	De Moivre's Theorem and its Applications.
March 16-21, 2020	Expansion of trigonometrical functions. Direct circular and hyperbolic functions and their properties.
March, 23-28, 2020	Inverse circular and hyperbolic functions and their properties.
March 30- April 4,2020	Logarithm of a complex quantity
April 6-11,2020	Gregory's series.
April 13-18,2020	Summation of Trigonometry series
April 20-25,2020	Revision and unit test
April 27-30,2020	Revision
	B.A./B.Sc. IstYear (Semester 2nd) **BM –122:Ordinary Differential Equations**
Even Sem	
2019-20	
Jan 1-4, 2020	Geometrical meaning of a differential equation, Exact differential equations
Jan 6-11, 2020	Integrating factors, First order higher degree equations
Jan 13-18, 2020	Solvable for x,y,p Lagrange's equations,
Jan 20-25,2020	Clairaut's equations, Equation reducible to Clairaut's form, Singular solutions.
Jan 27- Feb 1, 2020	Orthogonal trajectories in Cartesian coordinates and polar coordinates
Feb 3-8, 2020	Self orthogonal family of curves, Linear differential equations with constant coefficients.
Feb 10-15, 2020	Homogeneous linear ordinary differential equations, Equations reducible to homogeneous
Feb 17-22, 2020	Linear differential equations of second order, Reduction to normal form.
Feb 24-29, 2020	Transformation of the equation by changing the dependent variable/ the independent variable
March 2-7, 2020	Solution by operators of non-homogeneous linear differential equations.
March 16-21, 2020	Reduction of order of a differential equation. Method of variations of parameters, Method of undetermined coefficients.
March, 23-28, 2020	Ordinary simultaneous differential equations.
March 30- April 4,2020	Solution of simultaneous differential equations involving operators x (d/dx) or t (d/dt) etc
April 6-11,2020	Simultaneous equation of the form dx/P = dy/Q = dz/R. Total differential equations.

April 13-18,2020	Condition for Pdx + Qdy +Rdz = 0 to be exact
April 20-25,2020	Revision
April 27-30,2020	Unit test
	B.A./B.Sc. IstYear (Semester 2nd) BM –123:Vector Calculus
Even sem	
2019-20	
Jan 1-4, 2020	Scalar and vector product of three vectors,
Jan 6-11, 2020	Product of four vectors, Reciprocal vectors.
Jan 13-18, 2020	Vector differentiation Scalar Valued point functions,
Jan 20-25,2020	Vector valued point functions, derivative along a curve, directional derivatives
Jan 27- Feb 1, 2020	Gradient of a scalar point function, geometrical interpretation of grad F ,
Feb 3-8, 2020	Character of gradient as a point function
Feb 10-15, 2020	Divergence and curl of vector point function, characters of Div f and Curl f as point function, examples.
Feb 17-22, 2020	Gradient, divergence and curl of sums and product and their related vector identities.
Feb 24-29, 2020	Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors
March 2-7, 2020	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates,
March 16-21, 2020	Cylindrical co-ordinates and Spherical coordinates.
March, 23-28, 2020	Vector integration
March 30- April 4,2020	Line integral
April 6-11,2020	Surface integral
April 13-18,2020	Volume integral
April 20-25,2020	Revision
April 27-30,2020	Unit Test
	B.A. /B.Sc. - IInd Year (Semester – IV) BM -241 : SEQUENCES AND SERIES
2019-20	
Jan 1-4, 2020	Boundedness of the set of real numbers, least upper bound, greatest lower bound of a set,
Jan 6-11, 2020	Neighborhoods, interior points, isolated points, limit points,
Jan 13-18, 2020	Open sets, closed set, interior of a set, closure of a set in real numbers and their properties.
Jan 20-25,2020	Bolzano- Weiestrass theorem, Open covers, Compact sets and Heine-Borel Theorem
Jan 27- Feb 1, 2020	Sequence: Real Sequences and their convergence,

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Feb 3-8, 2020	Theorem on limits of sequence, Bounded and monotonic sequences, Cauchy's sequence,
Feb 10-15, 2020	Cauchy general principle of convergence, Subsequences, Subsequential limits, Infinite series: Convergence and divergence of
Feb 17-22, 2020	Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series
Feb 24-29, 2020	Cauchy' s general principle of Convergence of series, Convergence and divergence of geometric series,
March 2-7, 2020	Infinite series: D-Alembert's ratio test, Raabe's test,
March 16-21, 2020	Logarithmic test, de Morgan and Bertrand's test,
March, 23-28, 2020	Cauchy's Nth root test, Gauss Test, Cauchy's integral test,Cauchy's condensation test,Alternating series, Leibnitz's test, absolute and conditional convergence,
March 30- April 4,2020	Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test,
April 6-11,2020	Insertion and removal of parenthesis,Dirichlet's theorem,
April 13-18,2020	Riemann's Re-arrangement theorem, Pringsheim's theorem
April 20-25,2020	Revision
April 27-30,2020	Test
	B.A./B.Sc. 2ndYear (Semester 4th) **BM –242:Special Functions and Integral Transforms**
2019-20	
Jan 1-4, 2020	Power series method
Jan 6-11, 2020	Definitions of Beta and Gamma functions. Bessel equation and its solution
Jan 13-18, 2020	Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions.
Jan 20-25,2020	Legendre and Hermite differentials equations and their solutions
Jan 27- Feb 1, 2020	Legendre and Hermite functions and their properties-Recurrence Relations and generating functions
Feb 3-8, 2020	Orhogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre & Hermite Polynomials,
Feb 10-15, 2020	Laplace Integral Representation of Legendre polynomial.
Feb 17-22, 2020	Laplace Transforms – Existence theorem for Laplace transforms,
Feb 24-29, 2020	Shifting theorems, Laplace transforms of derivatives and integrals,

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March 2-7, 2020	Convolution theorem, Inverse Laplace transforms, convolution theorem
March 16-21, 2020	Inverse Laplace transforms of derivatives and integrals,
March, 23-28, 2020	Fourier transforms: Linearity property, Shifting, Modulation, Convolution
March 30- April 4,2020	Fourier Transform of Derivatives,
April 6-11,2020	Relations between Fourier transform and Laplace transform
April 13-18,2020	Parseval's identity for Fourier transforms,
April 20-25,2020	Revision
April 27-30,2020	Unit test
	B.A./B.Sc. 2ndYear (Semester 4th) **BM –243: Programming in C&Numerical Methods**
2019-20	
Jan 1-4, 2020	Programmer's model of a computer,
Jan 6-11, 2020	Algorithms, Flow charts, Data types,
Jan 13-18, 2020	Operators and expressions, Input / outputs functions. S
Jan 20-25,2020	Decisions control structure: Decision statements,
Jan 27- Feb 1, 2020	Implementation of Loops, Switch Statement & Case control structures
Feb 3-8, 2020	Functions, Preprocessors and Arrays.
Feb 10-15, 2020	Strings: Character Data Type, Standard String handling Functions
Feb 17-22, 2020	Arrays in Structures, Pointers: Pointers Data type, Pointers and Arrays, Pointers and Functions.
Feb 24-29, 2020	Bisection method,
March 2-7, 2020	Regula-Falsi method, Secant method,
March 16-21, 2020	Newton-Raphson's method. Newton's iterative method for finding pth root of a number,
March, 23-28, 2020	Order of convergence of above methods.
March 30- April 4,2020	Gauss-elimination method, Gauss-Jordan method, Crout's method.
April 6-11,2020	Triangularization method (LU decomposition method)
April 13-18,2020	Cholesky Decomposition method
April 20-25,2020	Revision
April 27-30,2020	Unit test
	B.A./B.Sc. 3rdYear (Semester 6th)
	BM –361 Real and complex Analysis
2019-20	
Jan 1-4, 2020	Jacobians, Beta and Gama functions,
Jan 6-11, 2020	Double and Triple integrals,

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Jan 13-18, 2020	Dirichlet's integrals, change of order of integration in double integrals.
Jan 20-25,2020	Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Coefficients,
Jan 27- Feb 1, 2020	Dirichlet's conditions, Parseval's identity for Fourier series,
Feb 3-8, 2020	Fourier series for even and odd functions, Half range series, Change of Intervals.
Feb 10-15, 2020	Extended Complex Plane, Stereographic projection of complex numbers
Feb 17-22, 2020	Continuity and differentiability of complex functions, Analytic functions,
Feb 24-29, 2020	Cauchy-Riemann equations, Harmonic functions.
March 2-7, 2020	Mappings by elementary functions
March 16-21, 2020	Translation, rotation, Magnification and Inversion.
March, 23-28, 2020	Conformal Mappings
March 30- April 4,2020	Mobius transformations.
April 6-11,2020	Fixed points, Cross ratio
April 13-18,2020	Inverse Points and critical mappings, Fixed points, Cross ratio,
April 20-25,2020	Revision
April 27-30,2020	Unit test
	B.A./B.Sc. 3rd Year (Semester 6th)
	BM –362 Linear Algebra
2019-20	
Jan 1-4, 2020	Vector spaces, subspaces, Sum and Direct sum of subspaces,
Jan 6-11, 2020	Linear span, Linearly Independent and dependent subsets of a vector space
Jan 13-18, 2020	Finitely generated vector space, Existence theorem for basis of a finitely generated vector space
Jan 20-25,2020	Finite dimensional vector spaces, Invariance of the number of elements of bases sets,
Jan 27- Feb 1, 2020	Dimensions, Quotient space and its dimension.
Feb 3-8, 2020	Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces
Feb 10-15, 2020	Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimensional vector spaces
Feb 17-22, 2020	Null Space, Range space of a linear transformation, Rank and Nullity Theorem
Feb 24-29, 2020	Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations

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March 2-7, 2020	Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of lineartransformations
March 16-21, 2020	Inner product spaces, Cauchy-Schwarz inequality
March, 23-28, 2020	Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis
March 30- April 4,2020	Bessel's inequality for finite dimensional vector spaces,Unitary linear transformations
April 6-11,2020	Gram-Schmidt Orthogonalization process, Adjoint of a linear transformation
April 13-18,2020	Unitary linear transformations
April 20-25,2020	Revision
April 27-30,2020	Unit test
	B.A./B.Sc. 3rdYear (Semester 6th)
	BM –363 Dynamics
2019-20	
Jan 1-4, 2020	Velocity and acceleration along radial, transverse
Jan 6-11, 2020	tangential and normal directions
Jan 13-18, 2020	Relative velocity and acceleration.
Jan 20-25,2020	Simple harmonic motion. Elastic strings.
Jan 27- Feb 1, 2020	Mass, Momentum and Force
Feb 3-8, 2020	Newton's laws of motion.
Feb 10-15, 2020	Work, Power and Energy.
Feb 17-22, 2020	Definitions of Conservative forces and Impulsive forces
Feb 24-29, 2020	Motion on smooth and rough plane curves
March 2-7, 2020	Projectile motion of a particle in a plane.
March 16-21, 2020	Vector angular velocity
March, 23-28, 2020	General motion of a rigid body
March 30- April 4,2020	Central Orbits,
April 6-11,2020	Kepler laws of motion
April 13-18,2020	Motion of a particle in three dimensions.
April 20-25,2020	Revision
April 27-30,2020	Unit test

	DYALSINGHCOLLEGE, KARNAL
	LessonPlanforOddSemester
	BC-105, BUSINESSMATHEMATICS-I
	B.ComSemester-1 (Gen/Hons.)
	DepartmentofMathematics
2019-20	
July16-20,2019	Logarithms, Anti-logarithms.

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July22-27,2019	Sequences and Series: Arithmetic progression
July29-Aug 3, 2019	Geometric Progressions
Aug 5-10,2019	Differentiation: Idea of simple derivative of different functions
Aug 12-17,2019	Rules of differentiation (simple standard forms).
Aug 19-24,2019	Maxima and Minima of functions of one variablerelating to cost
Aug 26-31,2019	Maxima and Minima of functions of one variable relating to revenue and profit.
Sep2-7,2019	Matrices and Determinants: concept of matrix, types, and algebra of matrices
Sep9-14,2019	Properties of determinants
Sep16-21,2019	Adjoint of a matrix, elementary row or columnoperations
Sep24-28,2019	Finding inverse of a matrix through adjoint
Sep 30-Oct 5, 2019	Solution of a system of linear equations having unique solution
Oct7-12,2019	Compound Interest
Oct14-19,2019	Annuities: different types of interest rates, concept of present value and amount of a sum
Oct21-23,2019	Valuation of simple loans and debentures; problems relating to sinking funds
Oct22-27,2018	Revision
Oct29–Nov5,2018	Revision

	B.Com 2nd Sem. General /Hons.BC-205 BUSINESS MATHEMATICS-II
Even Sem	
2019-20	
Jan1-4,2020	Permutations and Combinations
Jan6-11,2020	Binomial Theorem
Jan13-18,2020	Linear inequalities: graphical solution of linear inequalities in two variables
Jan20-25,2020	Solution of system of linear inequalities in two variables
Jan27-Feb1, 2020	Graphical method of solution
Feb3-8,2020	Problems relating to two variables including the case of mixed constraints

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Feb10-15,2020	Multiple solutions, unbounded solution and redundant constraints.
Feb17-22,2020	Data representation and interpretation: introduction, classification and tabulation of data
Feb24-29,2020	Diagrammatic and graphic representation of data
March2-7,2020	Significance of diagrams and graphs,
March16-21,2020	Types of diagrams: bar diagram
March, 23-28, 2020	Types of diagrams: pie chart, pictographs, graphs of time series
March30-April 4,2020	Line graphs; graphs of frequency distribution
April6-11,2020	Histogram, frequency polygon
April13-18,2020	Ogives or cumulative frequency curves, limitations of diagrams and graphs
April20-25,2020	Revision and unit test
April27-30,2020	Revision

	DYALSINGHCOLLEGE, KARNAL
	LessonPlanforOddSemester
	BCA-115 Mathematical Foundations – I
	BCA (First sem.)
	DepartmentofMathematics
2019-20	
July16-20,2019	Set, subsets and operations on sets
July22-27,2019	Venn diagram of sets
July29-Aug 3, 2019	Power set of a set Equivalence relation on a set and partition of a set
Aug 5-10,2019	Permutation and combinations,
Aug 12-17,2019	Partially ordered sets, Lattices (definition and examples)
Aug 19-24,2019	Boolean algebra (definition and examples)
Aug 26-31,2019	Epsilon and delta definition of the continuity of a function of a single variable
Sep2-7,2019	Basic properties of limits
Sep9-14,2019	Continuous functions and classifications of discontinuities
Sep16-21,2019	Derivative of a function, Derivatives of Logarithmic
Sep24-28,2019	Formation of differential equations order and degree of the differential equation,
Sep 30-Oct 5, 2019	Geometrical approach to the existence of the solution of the differential equation
Oct7-12,2019	Ordinary differential equations of first degree and the first order, exact differential equations
Oct14-19,2019	Linear differential equations of higher order with constant coefficients
Oct21-23,2019	Applications of differential equations to geometry
Oct22-27,2018	revision and unit test
Oct29–Nov5,2018	Revision

	BCA – 124 **Mathematical Foundation(II)**

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	Second semester
Even Sem	
2019-20	
Jan1-4,2020	Propositions and logical operators, Truth tables and propositions generated by a set
Jan6-11,2020	Equivalence and implications, Laws of logic
Jan13-18,2020	Mathematical system, Proposition over a universe
Jan20-25,2020	Mathematical induction, Quantifiers
Jan27-Feb1, 2020	Binary operations on a non empty set,
Feb3-8,2020	Groups, Subgroups, Normal Subgroups, Cosets, Factor groups
Feb10-15,2020	Rings, Sub rings, Ideals, Factor rings, Prime ideals, Minimal ideal, Fields, direct product of groups
Feb17-22,2020	Isomorphism of groups and rings
Feb24-29,2020	Addition and multiplication of matrices, Laws of matrix algebra
March2-7,2020	Singular and non singular matrices, Inverse of a matrix
March16-21,2020	Rank of a matrix, Rank of the product of two matrices
March, 23-28, 2020	Characteristic equations of a square matrix
March30-April 4,2020	Cayley-Hamilton Theorem, Eigen values and eigen vectors
April6-11,2020	Eigen values and eigen vectors of symmetric skew symmetric, Hermitian and skew – Hermitan matrices
April13-18,2020	Diagonalization of a square matrix
April20-25,2020	revision and unit test
April27-30,2020	revision

Visakh