

	DYAL SINGH COLLEGE, KARNAL
	Lesson Plan for Odd Semesters
	Algebra (BM-111)
	B.A /B.Sc. Semester-1
	Department of Mathematics
2017-18	
July 15 ,17-22,2017	Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices, Elementary Operations on matrices.
July 24-29, 2017	Rank of a matrices, Inverse of a matrix
July 31-Aug 5 ,2017	Ch. Equation of Matrix,
Aug 7-12 ,2017	Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix
Aug 14-19, 2017	Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix
Aug 21-26, 2017	Cayley Hamilton theorem and its use in finding the inverse of a matrix.
Aug 28-Sep 2, 2017	Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations, Theorems on consistency of a system of linear equations.
Sep 4-9, 2017	Unitary and Orthogonal Matrices, Bilinear and Quadratic forms.
Sep 11-16, 2017	Transformation of equation
Sep 18-23, 2017	Relations between the roots and coefficients of general polynomial equation in one variable ,Solutions of polynomial equations having conditions on roots
Sep 25-30, 2017	Common roots and multiple roots. Transformation of equations
Oct3- 7, 2017	Nature of the roots of an equation,Descarte's rule of signs.
Oct 9-14, 2017	Solutions of cubic equations (Cardon's method)
Oct 23- 28, 2017	Biquadratic equations and their solutions.
Oct 30-Nov 4, 2017	Problems discussed relevent to syllabus
Nov 6-13,2017	Unit test
	B.A/ B.Sc. – first Year (Semester – I)
	BM – 112 : Calculus
2017-18	
July 15 ,17-22,2017	Definition of the limit of a function. Basic properties of limits, Continuous functions and classification ofdiscontinuities.
July 24-29, 2017	Differentiability, Successive differentiation, Leibnitz theorem
July 31-Aug 5	Maclaurin and Taylor series expansions.

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Aug 7-12 ,2017	Asymptotes in Cartesian coordinates, intersection of curve and its asymptotes
Aug 14-19, 2017	Asymptotes in polar coordinates. Curvature, radius of curvature for Cartesian curves,
Aug 21-26, 2017	Newton's method. Radius of curvature for pedal curves. Tangential polar equations.
Aug 28-Sep 2, 2017	Centre of curvature, Circle of curvature, Chord of curvature, evolutes
Sep 4-9, 2017	Tests for concavity and convexity, Points of inflexion, Multiple points.
Sep 11-16, 2017	Cusps, nodes & conjugate points. Type of cusps.
Sep 18-23, 2017	Tracing of curves in Cartesian, parametric and polar coordinates.
Sep 25-30, 2017	Reduction formulae, Rectification
Oct 3- 7, 2017	Rectification(continued), intrinsic equations of curve,
Oct 9-14, 2017	Quadrature(area) Sectorial area, Area bounded by closed curves
Oct 23- 28, 2017	Volumes and surfaces of solids of revolution,
Oct 30-Nov 4, 2017	Theorems of Pappu's and Guilden.
Nov 6-13,2017	Revision and unit test
	B.A./B.Sc.– First Year (Semester – I) BM – 113 : Solid Geometry
2017-18	
July 15 ,17-22,2017	General equation of second degree.
July 24-29, 2017	Tracing of conics
July 31-Aug 5 ,2017	Tangent at any point to the conic, chord of contact,
Aug 7-12 ,2017	Pole of line to the conic, director circle of conic. System of conics.
Aug 14-19, 2017	Confocal conics. Polar equation of a conic, tangent and normal to the conic.
Aug 21-26, 2017	Sphere, Plane section of a sphere.
Aug 28-Sep 2, 2017	Sphere through a given circle. Intersection of two spheres, radical plane of two spheres.
Sep 4-9, 2017	Co-axial system of spheres
Sep 11-16, 2017	Cones, Right circular cone,
Sep 18-23, 2017	Enveloping cone and reciprocal cone.
Sep 25-30, 2017	Cylinder: Right circular cylinder and enveloping cylinder
Oct 3- 7, 2017	Central Conicoids: Equation of tangent plane
Oct 9-14, 2017	Director sphere, Normal to the conicoids.
Oct 23- 28, 2017	Polar plane of a point, Enveloping cone of a conicoid
Oct 30-Nov 4, 2017	Enveloping cylinder of a conicoid, Generating lines, Confocal conicoid, Reduction of second degree equations
Nov 6-13,2017	Revision

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B.A./B.Sc- IIInd Year (Semester-III)	
BM-231 Advanced Calculus	
2017-18	
July 15 ,17-22,2017	Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity
July 24-29, 2017	Chain rule of differentiability, Mean value theorems
July 31-Aug 5 ,2017	Rolle's Theorem and Lagrange's mean value theorem and their geometrical interpretations.
Aug 7-12 ,2017	Taylor's Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives
Aug 14-19, 2017	Indeterminate forms.
Aug 21-26, 2017	Limit and continuity of real valued functions of two variables. Partial differentiation, Total Differentials; Composite functions & implicit functions
Aug 28-Sep 2, 2017	Change of variables, Homogenous functions & Euler's theorem on homogeneous functions.
Sep 4-9, 2017	Differentiability of real valued functions of two variables. Schwarz and Young's theorem
Sep 11-16, 2017	Implicit function theorem. Maxima, Minima and saddle points of two variables
Sep 18-23, 2017	Lagrange's method of multipliers.
Sep 25-30, 2017	Curves: Tangents, Principal normal, Binomals, Serret-Frenet formulae. Locus of the centre of curvature
Oct 3- 7, 2017	Spherical curvature, Locus of centre of Spherical curvature,
Oct 9-14, 2017	Involutes, evolutes, Bertrand Curves.
Oct 23- 28, 2017	Surfaces: Tangent planes, one parameter family of surfaces
Oct 30-Nov 4, 2017	Envelopes
Nov 6-13,2017	Revision and unit test
B.A./B.Sc.- 2nd Year (Semester3)	
BM – 232 : Partial Differential Equation	
2017-18	
July 15 ,17-22,2017	Formation, order and degree of partial differential equation
July 24-29, 2017	Linear and Non-Linear Partial Differential Equation
July 31-Aug 5 ,2017	Complete solution, singular solution
Aug 7-12 ,2017	General solution, Solution of Lagrange's linear equations,
Aug 14-19, 2017	Charpit's general method of solution, Compatible systems of first order equations, Jacobi's method.
Aug 21-26, 2017	Linear partial differential equations of second and higher orders,

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Aug 28-Sep 2, 2017	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 4-9, 2017	Equations reducible to linear equations with constant coefficients.
Sep 11-16, 2017	Classification of linear partial differential equations of second order, Hyperbolic,
Sep 18-23, 2017	Classification of linear partial differential equations of second order, parabolic and elliptic types
Sep 25-30, 2017	Solution of linear hyperbolic equations, Monge's method for partial differential equations of second order.
Oct 3- 7, 2017	Cauchy' s problem for second order partial differential equations, Characteristic equations and characteristic curves of second order partial differential equation
Oct 9-14, 2017	Method of separation of variables: Solution of Laplace's equation,
Oct 23- 28, 2017	Wave equation
Oct 30-Nov 4, 2017	Diffusion (Heat) equation (one and two dimension)
Nov 6-13,2017	Revision and unit test
	B.A./B.Sc.- 2nd Year (Semester3) BM – 233 : Statics
2017-18	
July 15 ,17-22,2017	Composition and resolution of forces
July 24-29, 2017	Parallel forces
July 31-Aug 5 ,2017	Moments
Aug 7-12 ,2017	Couples.
Aug 14-19, 2017	Analytical conditions of equilibrium of coplanar forces.
Aug 21-26, 2017	Friction.
Aug 28-Sep 2, 2017	Centre of Gravity.
Sep 4-9, 2017	Virtual work.
Sep 11-16, 2017	Forces in three dimensions.
Sep 18-23, 2017	Poinsots central axis.
Sep 25-30, 2017	Wrenches.
Oct 3- 7, 2017	Null lines and planes.
Oct 9-14, 2017	Null lines and planes.
Oct 23- 28, 2017	Stable and unstable equilibrium
Oct 30-Nov 4, 2017	Revision
Nov 6-13,2017	Revision and unit test

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B.A./B.Sc.3rd Year (Semester 5th) BM –351 : Real Analysis	
2017-18	
July 15 ,17-22,2017	Riemann integral
July 24-29, 2017	Integrability of continuous and monotonic functions
July 31-Aug 5 ,2017	The Fundamental theorem of integral calculus. Mean value theorems of integral calculus.
Aug 7-12 ,2017	Improper integrals and their convergence
Aug 14-19, 2017	Abel's and Dirichlet's tests,
Aug 21-26, 2017	Frullani's integral, Integral as a function of a parameter
Aug 28-Sep 2, 2017	Differentiability and integrability of an integral of a function of a parameter.
Sep 4-9, 2017	Definition and examples of metric spaces, neighborhoods, limit points
Sep 11-16, 2017	Interior points, open and closed sets,
Sep 18-23, 2017	Closure and interior, boundary points, subspace of a metric space,
Sep 25-30, 2017	Equivalent metrics, Cauchy sequences,
Oct 3- 7, 2017	Completeness, Cantor's intersection theorem, Baire's category theorem, contraction Principle
Oct 9-14, 2017	Continuous functions, uniform continuity
Oct 23- 28, 2017	Sequential compactness, Bolzano-Weierstrass property,
Oct 30-Nov 4, 2017	Continuity in relation with connectedness
Nov 6-13,2017	Revision and unit test
B.A./B.Sc.3rd Year (Semester 5th) BM –352 : Groups and Rings	
2017-18	
July 15 ,17-22,2017	Definition of a group with example and simple properties of groups
July 24-29, 2017	Subgroups and Subgroup criteria
July 31-Aug 5 ,2017	Generation of groups, cyclic groups,
Aug 7-12 ,2017	Cosets, Left and right cosets, Index of a sub-group
Aug 14-19, 2017	Coset decomposition, Langrange's theorem and its consequences,
Aug 21-26, 2017	Normal subgroups, Quotient groups,
Aug 28-Sep 2, 2017	Homomorphisms, isomorphisms
Sep 4-9, 2017	Automorphisms and inner automorphisms of a group
Sep 11-16, 2017	Automorphisms of cyclic groups,
Sep 18-23, 2017	Permutations groups, Even and odd permutations, Alternating groups
Sep 25-30, 2017	Cayley's theorem, Center of a group and derived group of a group.
Oct 3- 7, 2017	Introduction to rings, subrings, integral domains and

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	fields,
Oct 9-14, 2017	Characteristics of a ring. Ring homomorphisms, ideals
Oct 23- 28, 2017	Euclidean rings, Polynomial rings, Polynomials over the rational field
Oct 30-Nov 4, 2017	Unique factorization domain, R unique factorization domain implies so is $R[X_1, X_2, \dots, X_n]$
Nov 6-13, 2017	Revision
	B.A./B.Sc.3rd Year (Semester 5th) BM –353 : Numerical Analysis
2017-18	
July 15 ,17-22,2017	Finite Differences operators and their relations. Finding the missing terms and effect of error in a difference tabular values
July 24-29, 2017	Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae.
July 31-Aug 5 ,2017	Interpolation with unequal intervals: Newton's divided difference
Aug 7-12 ,2017	Lagrange's Interpolation formulae, Hermite Formula.
Aug 14-19, 2017	Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula.
Aug 21-26, 2017	Probability distribution of random variables, Binomial distribution,
Aug 28-Sep 2, 2017	Poisson's distribution, Normal distribution: Mean, Variance and Fitting.
Sep 4-9, 2017	Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections –I & II.
Sep 11-16, 2017	Eigen Value Problems: Power method, Jacobi's method, Given's method, Householder's method, QR method, Lanczos method.
Sep 18-23, 2017	Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one- third and three-eighth rule
Sep 25-30, 2017	Single step methods, Picard's method. Taylor's series method, Euler's method, Runge-Kutta Methods.
Oct 3- 7, 2017	Multiple step methods; Predictor-corrector method,
Oct 9-14, 2017	Modified Euler's method,
Oct 23- 28, 2017	Milne-Simpson's method
Oct 30-Nov 4, 2017	Revision and unit test
Nov 6-13,2017	Revision and unit test
	Lesson plan for even sem B.A./B.Sc. IstYear (Semester 2nd)

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BM –121 : Number Theory and Trigonometry	
Even Sem	
2017-18	
Jan 1-6, 2018	Divisibility, G.C.D.(greatest common divisors), L.C.M.(least common multiple)
Jan 8-13, 2018	Primes, Fundamental Theorem of Arithmetic.
Jan 15-20, 2018	Linear Congruences, Fermat's theorem.
Jan 22-27,2018	Wilson's theorem and its converse.
Jan 29- Feb 3, 2018	Linear Diophantine equations in two variables
Feb 5-10, 2018	Complete residue system and reduced residue system modulo m. Euler function Euler's generalization of Fermat's theorem
Feb 12-17, 2018	Chinese Remainder Theorem. Quadratic residues. Legendre symbols.
Feb 19-24, 2018	Lemma of Gauss; Gauss reciprocity law. Greatest integer function $[x]$.
Feb 25-27, 2018	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 5-10, 2018	De Moivre's Theorem and its Applications.
March 12-17, 2018	Expansion of trigonometrical functions. Direct circular and hyperbolic functions and their properties.
March, 19-24, 2018	Inverse circular and hyperbolic functions and their properties.
March 26-31,2018	Logarithm of a complex quantity
April 2-7,2018	Gregory's series.
April 9-13,2018	Summation of Trigonometry series
April 16-21,2018	Revision and unit test
April 23-28,2018	Revision
	B.A./B.Sc. IstYear (Semester 2nd)
	BM –122:Ordinary Differential Equations
Even Sem	
2017-18	
Jan 1-6, 2018	Geometrical meaning of a differential equation. Exact differential equations
Jan 8-13, 2018	Integrating factors, First order higher degree equations
Jan 15-20, 2018	Solvable for x,y,p Lagrange's equations,
Jan 22-27,2018	Clairaut's equations. Equation reducible to Clairaut's form, Singular solutions.
Jan 29- Feb 3, 2018	Orthogonal trajectories in Cartesian coordinates and polar coordinates
Feb 5-10, 2018	Self orthogonal family of curves, Linear differential equations with constant coefficients.

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Feb 12-17, 2018	Homogeneous linear ordinary differential equations. Equations reducible to homogeneous
Feb 19-24, 2018	Linear differential equations of second order, Reduction to normal form.
Feb 25-27, 2018	Transformation of the equation by changing the dependent variable/ the independent variable
March 5-10, 2018	Solution by operators of non-homogeneous linear differential equations.
March 12-17, 2018	Reduction of order of a differential equation. Method of variations of parameters. Method of undetermined coefficients.
March, 19-24, 2018	Ordinary simultaneous differential equations.
March 26-31,2018	Solution of simultaneous differential equations involving operators $x (d/dx)$ or $t (d/dt)$ etc
April 2-7,2018	Simultaneous equation of the form $dx/P = dy/Q = dz/R$. Total differential equations.
April 9-13,2018	Condition for $Pdx + Qdy + Rdz = 0$ to be exact
April 16-21,2018	Revision
April 23-28,2018	Unit test
	B.A./B.Sc. IstYear (Semester 2nd) BM –123:Vector Calculus
Even Sem	
2017-18	
Jan 1-6, 2018	Scalar and vector product of three vectors,
Jan 8-13, 2018	Product of four vectors. Reciprocal vectors.
Jan 15-20, 2018	Vector differentiation Scalar Valued point functions,
Jan 22-27,2018	Vector valued point functions, derivative along a curve, directional derivatives
Jan 29- Feb 3, 2018	Gradient of a scalar point function, geometrical interpretation of $\text{grad } F$,
Feb 5-10, 2018	Character of gradient as a point function
Feb 12-17, 2018	Divergence and curl of vector point function, characters of $\text{Div } f$ and $\text{Curl } f$ as point function, examples.
Feb 19-24, 2018	Gradient, divergence and curl of sums and product and their related vector identities.
Feb 25-27, 2018	Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors
March 5-10, 2018	Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates,
March 12-17, 2018	Cylindrical co-ordinates and Spherical coordinates.
March, 19-24, 2018	Vector integration;
March 26-31,2018	Line integral,
April 2-7,2018	Surface integral,
April 9-13,2018	Volume integral

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April 16-21,2018	Revision
April 23-28,2018	Unit Test
	B.A. /B.Sc. - IInd Year (Semester – IV) BM -241 : SEQUENCES AND SERIES
2017-18	
Jan 1-6, 2018	Boundedness of the set of real numbers; least upper bound, greatest lower bound of a set,
Jan 8-13, 2018	Neighborhoods, interior points, isolated points, limit points
Jan 15-20, 2018	Open sets, closed set, interior of a set, closure of a set in real numbers and their properties.
Jan 22-27,2018	Bolzano- Weiestrass theorem, Open covers, Compact sets and Heine-Borel Theorem
Jan 29- Feb 3, 2018	Sequence: Real Sequences and their convergence,
Feb 5-10, 2018	Theorem on limits of sequence, Bounded and monotonic sequences, Cauchy's sequence,
Feb 12-17, 2018	Cauchy general principle of convergence, Subsequences, Subsequential limits. Infinite series: Convergence and divergence of
Feb 19-24, 2018	Infinite series: Convergence and divergence of Infinite Series, Comparison Tests of positive terms Infinite series
Feb 25-27, 2018	Cauchy's general principle of Convergence of series, Convergence and divergence of geometric series,
March 5-10, 2018	Infinite series: D-Alembert's ratio test, Raabe's test,
March 12-17, 2018	Logarithmic test, De Morgan and Bertrand's test,
March, 19-24, 2018	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 26-31,2018	Arbitrary series: Abel's lemma, Abel's test, Dirichlet's test,
April 2-7,2018	Insertion and removal of parenthesis, Dirichlet's theorem,
April 9-13,2018	Riemann's Re-arrangement theorem, Pringsheim's theorem
April 16-21,2018	Revision
April 23-28,2018	Test
	B.A./B.Sc. 2ndYear (Semester 4th) BM –242:Special Functions and Integral Transforms
2017-18	
Jan 1-6, 2018	Power series method
Jan 8-13, 2018	Definitions of Beta and Gamma functions. Bessel

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	equation and its solution
Jan 15-20, 2018	Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions.
Jan 22-27,2018	Legendre and Hermite differentials equations and their solutions
Jan 29- Feb 3, 2018	Legendre and Hermite functions and their properties- Recurrence Relations and generating functions
Feb 5-10, 2018	Orthogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre & Hermite Polynomials,
Feb 12-17, 2018	Laplace Integral Representation of Legendre polynomial.
Feb 19-24, 2018	Laplace Transforms – Existence theorem for Laplace transforms,
Feb 25-27, 2018	Shifting theorems, Laplace transforms of derivatives and integrals,
March 5-10, 2018	Convolution theorem, Inverse Laplace transforms, convolution theorem
March 12-17, 2018	Inverse Laplace transforms of derivatives and integrals,
March, 19-24, 2018	Fourier transforms: Linearity property, Shifting, Modulation, Convolution
March 26-31,2018	Fourier Transform of Derivatives,
April 2-7,2018	Relations between Fourier transform and Laplace transform
April 9-13,2018	Parseval's identity for Fourier transforms,
April 16-21,2018	Revision
April 23-28,2018	Unit test
	B.A./B.Sc. 2ndYear (Semester 4th) BM –243: Programming in C&Numerical Methods
2017-18	
Jan 1-6, 2018	Programmer's model of a computer,
Jan 8-13, 2018	Algorithms, Flow charts, Data types,
Jan 15-20, 2018	Operators and expressions, Input / outputs functions. S
Jan 22-27,2018	Decisions control structure: Decision statements,
Jan 29- Feb 3, 2018	Implementation of Loops, Switch Statement & Case control structures
Feb 5-10, 2018	Functions, Preprocessors and Arrays.
Feb 12-17, 2018	Strings: Character Data Type, Standard String handling Functions
Feb 19-24, 2018	Arrays in Structures, Pointers Data type, Pointers and Arrays, Pointers and Functions.
Feb 25-27, 2018	Bisection method,
March 5-10, 2018	Regula-Falsi method, Secant method,
March 12-17, 2018	Newton-Raphson's method. Newton's iterative method

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	for finding pth root of a number,
March, 19-24, 2018	Order of convergence of above methods.
March 26-31,2018	Gauss-elimination method, Gauss-Jordan method,.Crout's method.
April 2-7,2018	Triangularization method (LU decomposition method)
April 9-13,2018	Cholesky Decomposition method
April 16-21,2018	Revision
April 23-28,2018	Unit test
B.A./B.Sc. 3rdYear (Semester 6th)	
BM –361 Real and complex Analysis	
2017-18	
Jan 1-6, 2018	Jacobians, Beta and Gama functions,
Jan 8-13, 2018	Double and Triple integrals,
Jan 15-20, 2018	Dirichlet's integrals, change of order of integration in double integrals.
Jan 22-27,2018	Fourier's series: Fourier expansion of piecewise monotonic functions, Properties of Fourier Coefficients,
Jan 29- Feb 3, 2018	Dirichlet's conditions, Parseval's identity for Fourier series,
Feb 5-10, 2018	Fourier series for even and odd functions, Half range series, Change of Intervals.
Feb 12-17, 2018	Extended Complex Plane, Stereographic projection of complex numbers, c
Feb 19-24, 2018	Continuity and differentiability of complex functions, Analytic functions,
Feb 25-27, 2018	Cauchy-Riemann equations. Harmonic functions.
March 5-10, 2018	Mappings by elementary functions:
March 12-17, 2018	Translation, rotation, Magnification and Inversion.
March, 19-24, 2018	Conformal Mappings
March 26-31,2018	Mobius transformations.
April 2-7,2018	Fixed points, Cross ratio
April 9-13,2018	Inverse Points and critical mappings,Fixed points, Cross ratio,
April 16-21,2018	Revision
April 23-28,2018	Unit test
B.A./B.Sc. 3rdYear (Semester 6th)	
BM –362 Linear Algebra	
2017-18	
Jan 1-6, 2018	Vector spaces, subspaces, Sum and Direct sum of subspaces,
Jan 8-13, 2018	Linear span, Linearly Independent and dependent subsets of a vector space
Jan 15-20, 2018	Finitely generated vector space, Existence theorem for

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	basis of a finitely generated vector space
Jan 22-27,2018	Finite dimensional vector spaces, Invariance of the number of elements of bases sets,
Jan 29- Feb 3, 2018	Dimensions, Quotient space and its dimension.
Feb 5-10, 2018	Homomorphism and isomorphism of vector spaces, Linear transformations and linear forms on vector spaces
Feb 12-17, 2018	Dual Spaces, Bidual spaces, annihilator of subspaces of finite dimensional vector spaces
Feb 19-24, 2018	Null Space, Range space of a linear transformation, Rank and Nullity Theorem
Feb 25-27, 2018	Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations
March 5-10, 2018	Matrix of a linear Transformation, Change of basis, Eigen values and Eigen vectors of linear transformations
March 12-17, 2018	Inner product spaces, Cauchy-Schwarz inequality
March, 19-24, 2018	Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis
March 26-31,2018	Bessel's inequality for finite dimensional vector spaces, Unitary linear transformations
April 2-7,2018	Gram-Schmidt Orthogonalization process, Adjoint of a linear transformation
April 9-13,2018	Unitary linear transformations
April 16-21,2018	Revision
April 23-28,2018	Unit test
	B.A./B.Sc. 3rdYear (Semester 6th)
	BM –363 Dynamics
2017-18	
Jan 1-6, 2018	Velocity and acceleration along radial, transverse
Jan 8-13, 2018	Tangential and normal directions
Jan 15-20, 2018	Relative velocity and acceleration.
Jan 22-27,2018	Simple harmonic motion. Elastic strings.
Jan 29- Feb 3, 2018	Mass, Momentum and Force
Feb 5-10, 2018	Newton's laws of motion.
Feb 12-17, 2018	Work, Power and Energy.
Feb 19-24, 2018	Definitions of Conservative forces and Impulsive forces
Feb 25-27, 2018	Motion on smooth and rough plane curves
March 5-10, 2018	Projectile motion of a particle in a plane.
March 12-17, 2018	Vector angular velocity
March, 19-24, 2018	General motion of a rigid body
March 26-31,2018	Central Orbits,
April 2-7,2018	Kepler laws of motion

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April 9-13,2018	Motion of a particle in three dimensions.
April 16-21,2018	Revision

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	DYALSINGHCOLLEGE, KARNAL
	LessonPlanforOddSemester
	BC-105, BUSINESSMATHEMATICS-I
	B.ComSemester-1 (Gen/Hons.)
	DepartmentofMathematics
2017-18	
July15,17-22,2017	Logarithms, Anti-logarithms.
July24-29,2017	Sequences and Series: Arithmetic progression
July31-Aug5,2017	Geometric Progressions
Aug7-12,2017	Differentiation: Idea of simple derivative of different functions
Aug 14-19,2017	Rules of differentiation (simple standard forms).
Aug 21-26,2017	Maxima and Minima of functions of one variable relating to cost
Aug 28-Sep 2, 2017	Maxima and Minima of functions of one variable relating to revenue and profit.
Sep4-9,2017	Matrices and Determinants: concept of matrix, types, and algebra of matrices
Sep11-16,2017	Properties of determinants
Sep18-23,2017	Adjoint of a matrix, elementary row or column operations
Sep25-30,2017	Finding inverse of a matrix through adjoint
Oct3-7,2017	Solution of a system of linear equations having unique solution
Oct9-14,2017	Compound Interest
Oct23-28,2017	Annuities: different types of interest rates, concept of present value and amount of a sum
Oct30-Nov4, 2017	Valuation of simple loans and debentures; problems relating to sinking funds
Nov6-13,2017	Revision

	B.Com 2nd Sem.
	General /Hons.BC-205
	BUSINESS MATHEMATICS-II
Even Sem	
2017-18	
Jan1-6,2018	Permutations and Combinations

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Jan8-13,2018	Binomial Theorem
Jan15-20,2018	Linear inequalities: graphical solution of linear inequalities in two variables
Jan22-27,2018	Solution of system of linear inequalities in two variables
Jan29-Feb3, 2018	Graphical method of solution
Feb5-10,2018	Problems relating to two variables including the case of mixed constraints
Feb12-17,2018	Multiple solutions, unbounded solution and redundant constraints.
Feb19-24,2018	Data representation and interpretation: introduction, classification and tabulation of data
Feb25-27,2018	Diagrammatic and graphic representation of data
March5-10,2018	Significance of diagrams and graphs,
March12-17,2018	Types of diagrams: bar diagram
March, 19-24, 2018	Types of diagrams: pie chart, pictographs, graphs of time series
March26-31,2018	Line graphs; graphs of frequency distribution
April2-7,2018	Histogram, frequency polygon
April9-13,2018	Ogives or cumulative frequency curves, limitations of diagrams and graphs
April16-21,2018	Revision and unit test
April23-28,2018	Revision

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		DYALSINGHCOLLEGE, KARNAL
		LessonPlanforOddSemester
		BCA-115 Mathematical Foundations – I
		BCA (First sem.)
		DepartmentofMathematics
2017-18		
July15,17- 22,2017	Set, subsets and operations on sets	
July24-29,2017	Venn diagram of sets	
July31-Aug5 ,2017	Power set of a set Equivalence relation on a set and partition of a set	
Aug7-12,2017	Permutation and combinations,	
Aug 14-19,2017	Partially ordered sets, Lattices (definition and examples)	
Aug 21-26,2017	Boolean algebra (definition and examples)	
Aug 28-Sep 2, 2017	Epsilon and delta definition of the continuity of a function of a single variable	
Sep4-9,2017	Basic properties of limits	
Sep11-16,2017	Continuous functions and classifications of discontinuities	
Sep18-23,2017	Derivative of a function, Derivatives of Logarithmic	
Sep25-30,2017	Formation of differential equations order and degree of the differential equation,	
Oct3-7,2017	Geometrical approach to the existence of the solution of the differential equation	
Oct9-14,2017	Ordinary differential equations of first degree and the first order, exact differential equations	
Oct23-28,2017	Linear differential equations of higher order with constant coefficients	
Oct30-Nov4, 2017	Applications of differential equations to geometry	
Nov6-13,2017	revision and unit test	

	BCA – 124 Mathematical Foundation(II) Second semester	
Even Sem		
2017-18		
Jan1-6,2018	Propositions and logical operators, Truth tables and propositions generated by a set	
Jan8-13,2018	Equivalence and implications, Laws of logic	
Jan15-20,2018	Mathematical system, Proposition over a universe	
Jan22-27,2018	Mathematical induction, Quantifiers	
Jan29-Feb3, 2018	Binary operations on a non-empty set,	
Feb5-10,2018	Groups, Subgroups, Normal Subgroups, Cosets, Factor groups	
Feb12-17,2018	Rings, Sub rings, Ideals, Factor rings, Prime ideals, Minimal ideal, Fields, direct product of groups	
Feb19-24,2018	Isomorphism of groups and rings	
Feb25-27,2018	Addition and multiplication of matrices, Laws of matrix algebra	
March5-10,2018	Singular and non-singular matrices, Inverse of a matrix	
March12-17,2018	Rank of a matrix, Rank of the product of two matrices	
March, 19-24, 2018	Characteristic equations of a square matrix	
March26-31,2018	Cayley-Hamilton Theorem, Eigen values and eigen vectors	
April2-7,2018	Eigen values and eigen vectors of symmetric skew symmetric, Hermitian and skew – Hermitian matrices	
April9-13,2018	Diagonalization of a square matrix	
April16-21,2018	revision and unit test	
April23-28,2018	revision	

Vishach