

Rajiv Gandhi Government College Saha, Ambala

Department of Mathematics

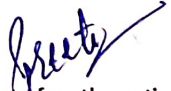
Lesson Plan For B.A. 3rd Semester (2024-25)

Paper : B23-SEC-326 (Quantitative Aptitude)

Name of Teachers : Jaswinder Singh

Month/Year	Topic
22 July to 31 July 2024	Linear Equations, Quadratic equations, System of algebraic equations in two variables and their applications in simple problems: s.
1 Aug to 15 Aug 2024	Problems on ages, Clocks
16 Aug to 31 Aug 2024	Time and distance: Problems based on trains, Boats and Streams, Pipes and Cistern.
1 Sep to 15 Sep 2024	Work and time: Problems on work and time, Work and wages.
16 Sep to 30 Sep 2024	Simple interest, Compound Interest
1 Oct to 15 Oct 2024	Partnership .Basic idea of set theory to solve practical problems. Trigonometric ratios and identities, Height and distance.
16 Oct to 30 Oct 2024	Basic idea of Permutations and Combinations. Events and sample space, Probability.
1 Nov to 22 Nov 2024	Data interpretation: Raw and grouped data, Bar Graph, Pie Chart, Mean, Median and Mode.

Ho D.


Department of mathematics


Principal

R.G.G.C. Saha, Ambala

Rajiv Gandhi Government College Saha, Ambala

Department of Mathematics

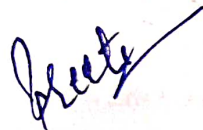
Lesson Plan For B.Com.1st Semester (2024-25)

Paper B23-COM-104 Business Mathematics -I

Name of Teachers : Jaswinder Singh

Month/Year	Topic
22 July to 31 July 2024	Set Theory: Representation of sets, equivalent sets, power set, complement of a set. Venn Diagrams:
1 Aug to 15 Aug 2024	Union and intersection of sets, De-Morgan's laws; Logical statements and truth tables.
16 Aug to 31 Aug 2024	Logarithms: Laws of operation, log tables; Arithmetic and geometric progression.
1 Sep to 15 Sep 2024	Arithmetic and Geometric progression.
16 Sep to 30 Sep 2024	Matrices and Determinants: Definition of a matrix, order, equality, types of matrices; Operations on matrices: Addition, multiplication and multiplication with a scalar and their simple properties.
1 Oct to 15 Oct 2024	Determinant of a square matrix (upto 3x 3 order): Properties of determinants, minors, co-factors and applications of determinants in finding the area of triangle, adjoint and inverse of a square matrix, solutions of a system of linear equations by examples.
16 Oct to 30 Oct 2024	Compound interest and annuities: Different types of interest rates, types of annuities, present value and amount of an annuity (including the case of continuous compounding)
1 Nov to 22 Nov 2024	valuation of simple loans and debentures, problems related to sinking funds.

Ho D.



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Principal



R.G.G.C. Saha, Ambala

Rajiv Gandhi Government College Saha, Ambala

Department of Mathematics

Lesson Plan For B.A./B.Sc. 5th Semester (2024-25)

Paper : Numerical Analysis (BM-353)

Name of Teachers : Jaswinder Singh

Month/Year	Topic
22 July to 31 July 2024	Finite difference ,operator interpolation with equal interval
1 Aug to 15 Aug 2024	Interpolation with unequal interval
16 Aug to 31 Aug 2024	Central Difference interpolation formula
1 Sep to 15 Sep 2024	Probability Distribution
16 Sep to 30 Sep 2024	Numerical differentiation
1 Oct to 15 Oct 2024	Eigen value problems
16 Oct to 30 Oct 2024	Numerical integration
1 Nov to 22 Nov 2024	Numerical Solutions of ordinary Differential Equation Revision, Assignment ,Class Test, KUK Exam

Ho D.

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R.G.G.C. Saha, Ambala

Lesson plan (2023-24)

Name of teacher – Pooja Girotra
Class –B.A (3rd SEM)
PAPER- MDC (Mathematics for All)

Days	UNIT	ARTICLES COVERED
22.07.2024 – 31.07.2024	I	The concept of a set, Types of sets, Operations on sets, Venn diagram, De-Morgan's laws. The concept of a function, Elementary functions and their graphical representation
1.08.2024 – 15.08.2024	I	Solution of simple quadratic and cubic equations, Solution of simultaneous linear equations up to three variables.
16. 08. 2024- 31.08.2024	I	Arithmetic progression, Geometric progression, The concept of differentiation, differentiation of simple functions, second order differentiation
1.09-2024 – 15.09.2024	I, II	, Maxima and minima of a function, Use of differentiation for solving problems related to real-life situations. Integration of simple algebraic
16. 09. 2024- 31.09.2024	II	Integration of simple trigonometric and exponential functions.
1.10-2024 – 15.10.2024	III	Presentation of data: Frequency distribution and cumulative frequency distribution, Diagrammatic and graphical presentation of data, Construction of bar, Pie diagrams, Histograms, Frequency polygon, Frequency curve and Ogives. Measures of central tendency: Arithmetic mean, Median, Mode, Geometric mean and Harmonic mean for ungrouped and grouped data.
16. 10. 2024- 31.10.2024	III	Measures of dispersion: Concept of dispersion, Mean deviation and its coefficient, Range, Variance and its coefficient, Standard deviation.
1.11.2024 – 22.11.2024	IV	Correlation: Concept and types of correlation, Methods of finding correlation: Scatter diagram, Karl Pearson's coefficients of correlation, Rank correlation. Linear regression: Principle of least square, Fitting of straight line, Two lines of regression, Regression coefficients. Solution of differential equations of first order and degree one with variable separable

Course Outcomes:

1. Gain knowledge of the concepts of sets, Venn diagrams, De-Morgan's laws, basic set operations and apply this factual knowledge to solve daily life mathematical problems which can be formulated in terms of sets.
2. Understand the concept of differentiation as the rate of change of dependent variable with respect to the independent variable. Gain knowledge of differentiation of various functions and apply it to the problems of its own discipline and other disciplines for computing the rate of change.
3. Acquire cognitive and technical knowledge about a variety of methods of representation of statistical data and methods of measure of central tendency. Analyze the problem and apply the best measure of central tendency to draw inferences from the available data.

Pooja Girotra

Sanjiv
Pooja Girotra

Lesson plan (2023-24)

Name of teacher – Pooja Girotra
 Class –B.A (1st SEM)
 PAPER- MDC (Basic Mathematics)

Days	UNIT	ARTICLES COVERED
22.07.2024 – 31.07.2024	I	Sets and their representations, Empty set, Finite and infinite sets, Subsets, Equal sets, Power sets, Universal set, Union and intersection of sets, Difference of two sets, Complement of a set, Venn diagram, De-Morgan's laws and their applications
1.08.2024 – 15.08.2024	I	An introduction to matrices and their types, Operations on matrices, Symmetric and skew-symmetric matrices, Minors, Co-factors
16. 08. 2024- 31.08.2024	I	Determinant of a square matrix, Adjoint and inverse of a square matrix, Solutions of a system of linear equations up to order .
1.09-2024 – 15.09.2024	II	Complex numbers, Operations on complex numbers, Modulus and argument of a complex number. Linear inequalities
16. 09. 2024- 31.09.2024	II	Algebraic solutions of linear inequalities in two variables and their graphical representation. Quadratic equations, Solution of quadratic equations.
1.10-2024 – 15.10.2024	III	Arithmetic progression, Geometric progression, Harmonic progression, Arithmetic mean (A.M.), Geometric mean (G.M.)
16. 10. 2024- 31.10.2024	III, IV	Harmonic mean (H.M.), Relation between A.M., G.M. and H.M. Straight lines: Slope of a line and angle between two lines
1.11.2024 – 22.11.2024	IV	Different forms of equation of a line: Parallel to co-ordinate axes, Point-slope form, Slope-intercept form, Two-point form, General form; Distance of a point from a straight line. Standard form of a circle and its properties.

Course Outcomes:

1. Gain knowledge of the concepts of sets, Venn diagrams, De-Morgan's laws, basic set operations and apply this factual knowledge to solve daily life mathematical problems which can be formulated in terms of sets.
2. Have the knowledge of the basic concepts of complex numbers and acquire skills to solve linear inequalities and quadratic equations.
3. Gain the knowledge of the concepts of Arithmetic progression, Geometric progression and Harmonic progression, and find A.M., G.M. and H.M. of given numbers.
4. Have the conceptual knowledge of straight lines and circles. Find out the slope of a line, angle between two lines, and know about various forms of a straight line and the standard form of a circle.

Pooja

Sunil

Rajiv Gandhi Government College Saha, Ambala
Department of Mathematics (Lesson Plan For B.A./B.Sc. 5th Sem (2024-25))
Name of Teacher: Ms.Preeti **Paper : Real Analysis and Groups and Rings**

Month/Year	Real Analysis	Group and Rings
22 July to 31 July, 2024	Riemann integral, Integrability of continuous and monotonic functions, The Fundamental theorem of integral calculus. connectedness, components, continuity in relation with connectedness.	Definition of a group with example and simple properties of groups, Subgroups and Subgroup criteria
1 Aug to 15 Aug 2024	The Fundamental theorem of integral calculus. Mean value theorems of integral calculus.	Generation of groups, cyclic groups, Cosets, Left and right cosets, Index of a sub-group Coset decomposition, Lagrange's theorem and its consequences, Normal subgroups, Quotient groups
16 Aug to 31 Aug 2024	II Improper integrals and their convergence, Comparison tests, Abel's and Dirichlet's tests, Frullani's integral,	Homomorphisms, isomorphisms, automorphisms and inner automorphisms of a group. Automorphisms of cyclic groups, Permutations groups
1 Sep to 15 Sep 2024	Integral as a function of a parameter. Continuity, Differentiability and integrability of an integral of a function of a parameter.	Even and odd permutations. Alternating groups, Cayley's theorem, Center of a group and derived group of a group.
16 Sep to 30 Sep 2024	Definition and examples of metric spaces, neighborhoods, limit points, interior points, open and closed sets, closure and interior, boundary points,	Introduction to rings, subrings, integral domains and fields, Characteristics of a ring. Ring homomorphisms.
1 Oct to 15 Oct 2024	subspace of a metric space, equivalent metrics, Cauchy sequences, completeness, Cantor's intersection theorem, Baire's category theorem, contraction Principle	Ideals (principal, prime and Maximal) and Quotient rings, Field of quotients of an integral domain
16 Oct to 31 Oct 2024	Continuous functions, uniform continuity, compactness for metric spaces, sequential compactness, Bolzano-Weierstrass property, total boundedness, finite intersection property, continuity in relation with compactness,	Euclidean rings, Polynomial rings, Polynomials over the rational field, The Eisenstein's criterion, Polynomial rings over commutative rings, Unique factorization domain, R unique factorization domain
1 Nov to 22 Nov 2024	Revision of syllabus, Test	Revision of syllabus, Test

Preeti

Sarabjit

Rajiv Gandhi Government College Saha, Ambala
Department of Mathematics (Lesson Plan-B.A./B.Sc. 1st Sem & 3rd sem (2024-25))
Name of Teachers: Ms.Preeti **Paper : Calculus and Differential equations**

Month/Year	Calculus	Differential equations
22 July to 31 July, 2024	ϵ - δ definition of limit and continuity of a real valued function, Basic properties of limits, Types of discontinuities, Differentiability of functions.	Basic concepts and genesis of ordinary differential equations, Order and degree of a differential equation, Solutions of differential equations of first order and first degree
1 Aug to 15 Aug 2024	Application of L'Hospital rule to indeterminate forms, Successive differentiation, Leibnitz theorem, Taylor's and Maclaurin's series expansion with different forms of remainder.	Exact differential equations, Integrating factor, First order higher degree equations solvable for x, y and p, Lagrange's equations, Clairaut's form and singular solutions. Orthogonal trajectories of one-parameter families of curves in a plane.
16 Aug to 31 Aug 2024	Asymptotes: Horizontal, vertical and oblique asymptotes for algebraic curves, Asymptotes for polar curves, Intersection of a curve and its asymptotes,	Solutions of linear ordinary differential equations with constant coefficients, linear non-homogeneous differential equations. Linear differential equation of second order with variable coefficients
1 Sep to 15 Sep 2024	Curvature and radius of curvature of curves (cartesian, parametric, polar & intrinsic forms), Newton's method, Centre of curvature and circle of curvature.	Method of reduction of order, method of undetermined coefficients, method of variation of parameters. Cauchy-Euler equation.
16 Sep to 30 Sep 2024	Multiple points, Node, Cusp, Conjugate point, Tests for concavity and convexity,	Solution of simultaneous differential equations, total differential equations. Genesis of Partial differential equations (PDE), Concept of linear and nonlinear PDEs.
1 Oct to 15 Oct 2024	Points of inflexion, Tracing of curves, Reduction formulae, Rectification,	Complete solution, general solution and singular solution of a PDE. Linear PDE of first order. Lagrange's method for PDEs of the form: $P(x, y, z) p + Q(x, y, z) q = R(x, y, z)$, where $p = \partial z / \partial x$ and $q = \partial z / \partial y$.
16 Oct to 31 Oct 2024	intrinsic equation of a curve, Quadrature, Area bounded by closed curves, Volumes and surfaces of solids of revolution.	Integral surfaces passing through a given curve. Surfaces orthogonal to a given system of surfaces. Compatible systems of first order equations. Charpit's method, Special types of first order PDEs, Jacobi's method. Second Order Partial Differential Equations with Constant Coefficients.
1 Nov to 22 Nov 2024	REVISION OF SYLLABUS, Test	REVISION OF SYLLABUS, Test

Preeti

Sanjiv

Programme & Course Outcomes

Department of Mathematics.

PROGRAMME OUTCOME	
<p>PROGRAMME SPECIFIC OUTCOME</p>	<p>Formulate and develop mathematical arguments in a logical manner. Also when there is a need for information, the student will be able to identify, locate, evaluate, and effectively use than information for handling issues or solving problems at hand. Acquire good knowledge and understanding in advanced areas of mathematics and its applications. More specifically-</p> <ul style="list-style-type: none"> ● Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study. ● A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning. ● Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution. ● Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory. ● Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment. ● Ability to pursue advanced studies and research in pure and applied mathematical science. <p>Students will be able to apply critical thinking skills to solve problems that can be modelled mathematically, to critically interpret numerical and graphical data, to read and construct mathematical arguments and proofs, to use computer technology appropriately to solve problems and to promote understanding, to apply mathematical knowledge to a career related to mathematical sciences thus cultivating a proper attitude for higher learning in mathematics. Students will be able to</p> <ul style="list-style-type: none"> ● Think in a critical manner. ● Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.

	<ul style="list-style-type: none"> • Formulate and develop mathematical arguments in a logical manner. • Acquire good knowledge and understanding in advanced areas of mathematics and statistics; chosen by the student from the given courses. • Understand, formulate and use quantitative models arising in social science, Business and other contexts.
LEARNING OUTCOME	<p>Students will be well equipped to critically analyse a given problem, understand and build a Mathematical model to represent the problem, solve the resulting equations and interpret the resulting solution. Students are well prepared for higher studies in their chosen field.</p>
Class-B.Sc/B.A 1st year	
COURSES	OUTCOMES
COURSE TITLE: CALCULUS	<p>After completing this course, the learner will be able to:</p> <p>1. Gain knowledge of the concepts and theory of limit, continuity and differentiability of functions. Attain skills of calculating the limit of functions and examining the continuity and differentiability of different types of functions, and perform successive differentiation of functions. To apply the procedural knowledge to obtain the series expansions of functions which find multidisciplinary applications. 2. Understand concepts of asymptotes and curvature, the geometrical meaning of these terms and to have procedural knowledge to solve related problems. 3. Determine singular points of a curve and classify them. Understand the concept of rectification of curves and derive the reduction formulae. 4. Have theoretical knowledge and practical skills to evaluate the area bounded by the curves, and volume and surface area of solids formed by revolution of curves. 5. Attain cognitive and technical skills required for solving different problems of calculus associated with tracing of curves, determination of curvature, and rectification of curves, volume and surface area of solids of revolution. Have technical and practical skills of solving calculus problems related to differentiation and integration of functions by using MAXIMA software.</p>

COURSE TITLE:INTRODUCTORY MATHEMATICS(MDC 1)	
COURSE TITLE : ALGEBRA AND THEORY NUMBER	<p>After completing this course, the learner will be able to: 1. Gain the knowledge of set theory, types of sets and operations on sets. Understand various concepts of matrices and determinants, and acquire the cognitive skills to apply different operations on matrices and determinants. 2. Have the knowledge of the basic concepts of complex numbers and acquire skills to solve linear inequalities and quadratic equations. 3. Gain the knowledge of the concepts of Arithmetic progression, Geometric progression and Harmonic progression, and find A.M., G.M. and H.M. of given numbers. 4. Have the conceptual knowledge of straight lines and circles. Find out the slope of a line, angle between two lines, and know about various forms of a straight line and the standard form of a circle. 5. Attain the skills to make use of the learnt concepts of Introductory Mathematics in multidisciplinary learning contexts and to know their applications.</p> <p>After completing this course, the learner will be able to: 1. Gain knowledge of the concepts of symmetric, skew-symmetric, Hermitian, skew-Hermitian, Orthogonal and Unitary matrices, Linear dependence and independence of rows and columns of a matrix. Have knowledge of procedure and cognitive skills used in calculating rank of a matrix, eigen values, characteristic equation, minimal polynomial of a matrix and technical skills used in solving problems based on Cayley- Hamilton theorem. 2. Have knowledge of the concepts used in solving problems based on relations between the roots and coefficients of general polynomial equation in one variable, solutions of polynomial equations having conditions on roots, common roots and multiple roots. Understand Descartes' rule of signs and learn cognitive and technical skills required in assessing nature of the roots of an equation and solving problems based on these. 3. Have deeper and procedural knowledge required for solving cubic and biquadratic equations used in Mathematics as well as many other learning fields of study. To understand the basic concepts of number theory and their applications in problem solving and life-long learning. 4. Have knowledge of concepts, facts, principles and theories of Linear Congruences, Fermat's theorem, Euler's theorem, Wilson's theorem and its converse, Chinese Remainder theorem. Attain cognitive skills used in solving linear Diophantine equations in two variables. 5. Attain cognitive and technical skills required to formulate and solve practical problems involving rank of a matrix; inverse of a matrix; Cardon's method, Ferrari's method, Descartes's method, Cayley-Hamilton theorem, Euler's theorem and Chinese Remainder theorem. Have technical and practical skills required for solving algebraic equations, finding inverse and eigen values of matrices by using built in functions of MAXIMA software.</p>

<p>COURSE TITLE: MATHEMATICS FOR COMMERCE AND SOCIAL SCIENCES (MDC 2)</p>	<p>After completing this course, the learner will be able to: 1. Understand and have the procedural knowledge of the concepts of matrices and determinants to solve simultaneous linear equations. 2. Gain the knowledge to find derivatives and integration of simple functions related to commerce and social sciences. Acquire skills to make use of derivatives and debenture and sinking funds and attain skills to use these concepts in problem solving. 4. Gain the knowledge and understanding of the concepts of Linear programming and develop skills of formulating and solving linear programming problems based on real world problems. 5. Attain the cognitive and technical skills required for accomplishing assigned tasks relating to the chosen 34(988) components of the course. fields of learning in the context of broad multidisciplinary contexts to solve commercial and social real world problems using Mathematics.</p>
<p>COURSE TITLE: NUMERICAL ABILITY ENHANCEMENT SKILLS (SEC II)</p>	<p>After completing this course, the learner will be able to: 1. Understand real number system, fundamental arithmetical operations, use of BODMAS rule and solve typical expressions accurately and fast. 2. Acquire skill to identify types of given sequences/series and apply suitable method to find a particular term, sum of specific number of terms and practice this learning in real life mathematical problems. 3. To formulate equations for specific mathematical problem and practice use of mathematical skills to solve that. 4. Have a deeper and comprehensive understanding of the basic concepts of Percentage, Profit & Loss, Alligation or mixture, Averages and acquire skill to use this knowledge in real life problems. 5. Attain cognitive and analytical skills to identify, analyze and generate solutions to realistic problems by exploring procedural knowledge associated with the problems. Have analytical skills to compare and recognize various geometrical figures available in surroundings with mathematical figures and determine areas and volumes of the same.</p>
<p>Class-B.Sc/B.A 2nd year</p>	<p>After completing this course, the learner will be able to: 1. Gain knowledge of the basic concepts of ordinary differential equations and learn various techniques of finding exact solutions of certain solvable first order differential equations. 2. Have procedural knowledge and cognitive and technical skills of solving homogeneous and nonhomogeneous second order linear ordinary differential equations with constant coefficients and with variable coefficients. 3. Gain knowledge of theory of total differential equations and basic concepts of partial differential equations. To learn methods and techniques for solving linear PDEs of first order and to acquire technical skills for accomplishing assigned tasks relating to formulation and solution of PDEs in broad multidisciplinary contexts. 4. Have knowledge of concepts and theories of second order PDEs and to apply theory of PDEs to determine integral surfaces through a given curve and to find orthogonal surfaces. To understand compatible systems and to learn cognitive and technical skills required for selecting and using relevant Charpit method, Jacobi method methods to assess the appropriateness of approaches for solving PDEs.5. To attain cognitive and technical skills required for selecting and using relevant methods and techniques to assess the appropriateness of approaches to solving problems associated with the differential equations. To attain technical skill of solving differential equations by using built in functions of MAXIMA software.</p>
<p>COURSE TITLE: DIFFERENTIAL EQUATIONS</p>	<p>After completing this course, the learner will be able to: 1. Gain knowledge of the concept of different conic sections, their classification and properties. Understand various terms related to conic sections and gain skills to use them in problem solving. 2. Have knowledge of general form of equation of a sphere and attain procedural knowledge required for solving problems related to intersection of spheres, tangent plane and line, orthogonality, length of tangent and co-axial system of spheres. Learn about equations of cones and apply knowledge for problem solving. 3. Have deeper knowledge and understanding of cylinder, enveloping cylinder, concepts of conicoids, tangent plane, director sphere, normal, envelope</p>
<p>COURSE: ANALYTICAL GEOMETRY & VECTOR CALCULUS</p>	<p>After completing this course, the learner will be able to: 1. Gain knowledge of the concept of different conic sections, their classification and properties. Understand various terms related to conic sections and gain skills to use them in problem solving. 2. Have knowledge of general form of equation of a sphere and attain procedural knowledge required for solving problems related to intersection of spheres, tangent plane and line, orthogonality, length of tangent and co-axial system of spheres. Learn about equations of cones and apply knowledge for problem solving. 3. Have deeper knowledge and understanding of cylinder, enveloping cylinder, concepts of conicoids, tangent plane, director sphere, normal, envelope</p>

<p>COURSE TITLE: MATHEMATICS FOR ALL (MDC 3)</p>	<p>and to make further use thereof. 4. Understand and solve problems related to scalar and vector product of vectors, vector differentiation, directional derivatives, gradient, divergence and curl operators. Have deeper understanding of line, surface and volume integrals, their evaluation, proof of Gauss Divergence, Green's and Stoke's theorems and gain theoretical and technical knowledge in computing different surface flux integrals, volume integrals and line integrals used in other disciplines also. 5. Attain cognitive and technical skills required for solving practical problems related to assessing nature of conicoid, their characteristics. Learn skills to formulate and solve real life practical problems on sphere, cone and cylinder; to generate solutions of practical problems involving complex line, surface and volume integral using Gauss Divergence theorem, Stoke's theorem, Green's theorem in a very easy manner</p> <p>After completing this course, the learner will be able to: 1. Gain knowledge of the concepts of sets, Venn diagrams, De-Morgan's laws, basic set operations and apply this factual knowledge to solve daily life mathematical problems which can be formulated in terms of sets. 2. Understand the concept of differentiation as the rate of change of dependent variable with respect to the change in independent variable. Gain knowledge of differentiation of various functions and apply it to the problems of its own discipline and other disciplines for computing the rate of change. 3. Acquire cognitive and technical knowledge about a variety of methods of representation of statistical data and methods of measure of central tendency. Analyze the problem and apply the best measure of central tendency to draw inferences from the available data. 4. Understand the concept of correlation, correlation methods and conclude about the type of correlation for the available data. Comprehend the skills of curve fitting. 5. Attain a range of cognitive and technical skills to differentiate and integrate various functions. Use procedural knowledge to solve simple first order differential equations. Have technical and practical skills required for selecting and using suitable methods for data representation and measure of central tendency.</p>
<p>COURSE TITLE: QUANTITATIVE APTITUDE(SEC 3)</p>	<p>After completing this course, the learner will be able to: 1. Comprehend the formulation of equations for specific mathematical problems and use mathematical skills to solve those. 2. Acquire the procedural knowledge to analyze and solve problems related to work & time, work and wages and apply those in real life situations. 3. To get deeper knowledge and understanding of concepts of Simple Interest, Compound Interest, Partnership, Work and time and use this procedural knowledge to perform assigned tasks of solving such problems. 4. Familiarize and get acquainted with various measures of central tendency and using cognitive skills to choose better of these for the available data and draw the inferences/results. 5. Attain a range of cognitive and technical skills to analyze and comprehend various numerical concepts, e.g., Formulation of equations, S.I. & C.I., Work & time, Work & Wages, Set theory etc. and apply these learned skills and techniques to solve daily life mathematical problems accurately, logically and well in time.</p>
<p>Class-B.Sc/B.A 3rd year</p>	
<p>COURSE TITLE : REAL ANALYSIS</p>	<p>Real Analysis describes the fundamental properties of the real numbers. It demonstrates an understanding of Riemann Integral, fundamental theorems of integral calculus, mean value theorem of integral calculus, improper integrals and their convergence, comparison tests, Integrability of an integral of a function of parameter. It gives the basic knowledge of metric space, open closed metric spaces and their compacters. This course is a proof based course.</p>
<p>COURSE TITLE : GROUPS AND RINGS</p>	<p>This course gives an introduction to group and ring theory. It covers the fundamental definitions and results in group theory, including the Lagrange's Theorem, group homomorphism, the relation between normal subgroups and quotient groups and the isomorphism and auto Oorphism theorems. It gives the detailed knowledge of the structure of finitely generated Abelian groups, cyclic groups, and permutation groups, symmetric and alternating groups. It covers the fundamental concepts and results in ring theory, including the concepts of an ideal, quotient ring, integral domain and fields. It also covers the Euclidean rings, Polynomial rings, Eisenstein's criterion of irreducibility, Unique Factorization Domain.</p>

<p>COURSE TITLE : NUMERICAL ANALYSIS</p>	<p>1. The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs.2. The main objective of this course is to provide students with an introduction to the field of numerical analysis.3. Derive appropriate numerical methods to solve interpolation based problems.4. Derive appropriate numerical methods to solve probability based problems.5. Prove results for various numerical root finding methods.</p>
<p>COURSE TITLE :REAL AND COMPLEX ANALYSIS</p>	<p>This course consists of real analysis and complex analysis. Real analysis gives the vast knowledge of Jacobians, Beta and Gamma function, Double and Triple Integral, change of order of integration in double integrals. It gives the deep knowledge of furies series, furies series of piecewise monotonic function, properties of furies coefficients, Dirichlet's conditions, Parseval's identity for furies series, Fourier series for even and odd function, Half range series and change of intervals. Complete analysis makes us know about extended complete plane, Stereographic projection of complex numbers, continuity and differentiation of complex numbers, analytic functions, Cauchy-Riemann equations, harmonic functions, mappings by elementary functions, translation, rotation, magnification and inversion, conformal mappings, mobius transformations, fixed points, cross ratio, inverse points and critical mappings.</p>
<p>COURSE TITLE :LINEAR ALGEBRA</p>	<p>1.Solve systems of linear equations,2. Analyze vectors in R^n geometrically and algebraically,3. Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces,4. Use matrix algebra and the related matrices to linear transformations,5. Compute and use determinants,6. Compute and use eigenvectors and eigenvalues,7. Determine and use orthogonality, and8. Use technological tools such as computer algebra systems or graphing calculators for visualization and calculation of linear algebra concepts</p>
<p>COURSE TITLE :DYNAMICS</p>	<p>This paper helps us in knowing about velocity and acceleration along radial, transverse, tangential and normal directions, relative velocity and acceleration, Simple Harmonic Motion and Elastic Strings. It tells us about Mass, Momentum and Force, Newton's laws of motion, Work, Power and Energy, Definitions of Conservative forces and Impulsive forces. It gives immense knowledge of Motion on smooth and rough plane curves, Projectile motion of a particle in a plane, Vector angular velocity, Central orbits, Kepler's laws of motion, and Motion of a particle in three dimensions, Acceleration in term of different coordinate systems.</p>
<p>COURSE TITLE : BUSINESS MATHEMATICS I</p>	<p>After completing this course, the learner will be able to: 1. understand set theory, logical statements and truth tables. 2. learn the logarithms and arithmetic and geometric progressions and their applications. 3. familiarize with the concepts of matrices and determinants. Learn to solve system of simultaneous linear equations. 4. have the conceptual knowledge of Compound interest, annuity, loan, depreciation and sinking funds and attain skills to use these concepts in daily life.</p>
<p>COURSE TITLE :BUSINESS MATHEMATICS II</p>	<p>After completing this course, the learner will be able to: 1. gain the knowledge to find derivatives simple functions related to commerce problems, attain skills to use application of derivatives in evaluating maxima and minima. 2. learn to find integration of simple functions related to commerce and economic problems, attain skills to use application of integration in business and commerce problems. 3. apply binomial theorem, learn the concept and applications of permutations and combinations. 4. learn the concept of Linear programming and formulation of linear programming problems related to business and commerce.</p>

PRINCIPAL

