LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. Ravinder
Class and Semester: B.A. second year (3rd Semester)
SEC: QUANTITATIVE APTITUDE
Subject: Mathematics

July 2024:- **Topics:-** Linear Equations,Quadratic Equations,Sustem of algebraic equations in two variables and their applications in simple problems. **Learning Objectives:-**Students should be able to solve practical problems with the help of algebraic equations.
August 2024   **Topics :-**   Time and Distance:Problems based on trains,Boats and streams,Pipes and Sistern. **Learning Objective:-** Students will able to solve practical life problems on time and distance.
September 2024   Topics: Simple Interest,Compound Interest,Partenership,Basic idea of set theory to solve problems. **Learning Objective:-** Students will be able to find simple interest ,compound interest.
Oct 2024   Topics- Basic idea of permutations and Combinations,Events ans sample space,Probability, Data interpretation:Raw and grouped data,Bar graph,Pie chart,Mean,Median and Mode. **Learning Objective:-** Students will be able to learn about **Probability,Mean,Median and mode.**
November 2024 **Revision of syllabus**

Ravinder
21/8/24

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. Ravinder
Class and Semester: B.A. final year (5th Semester)
Subject :Mathematics
Paper: GROUPS AND RINGS
July 2024:-   **Topics:-** Binary opertation, Definitions and properties of groups,Subgroups   **Learning Objectives:-**Students should be able to learn about definition of group and subgroup.
August 2024   **Topics :- Different properties of subgroups,cyclic group,Fundamental theorems on subgroups of a group, Cosets and its different properties,Homomorphism,Automorphism,Isomorphism and inner automorphism of a group.Centre of a group and deruived of a group**   **Learning Objective:- Students will able to learn about Groups,subgroups and cosets**
September 2024   Topics :Introduction of Rings,sub rings Integral domain and Fields.Chracterstic of a ring.Ring homomorphism,Ideals and Quotient rings.Fields of quotient of an integral domain.   **Learning Objective:- Students will be able to learn about Rings and Ideals.**
Oct 2024   **Topics-** Euclidean Rings,Polynomial Rings,Polynomials over the rational field,The Eienstein criterion of irereducibility.   **Learning Objective:- Students will be able to learn about Different types of Rings and Fields.**
November 2024:   **Revision of syllabus**

Ravinder
21|8|24

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. Ravinder

Class and Semester: B.A. final year (5th Semester)

Paper: REAL ANALYSIS

July 2024:-

Topics:- Boundesd Function, Lower sums,Upper sums,Least upper bound,Gteatest lower bound,Open sets, closed sets.

Learning Objectives:-Students should be able to learn about Riemann lower and upper sums.

August 2024

Topics :- Riemaan integration Darboux theorem   Improper Integrals and their Convergence,Comparison test,Abel's and Dirichlet's test,Frullani's integral,Integral as a function of a parameter,.

Learning Objective:- Students will able to learn about Riemann integration and Improper Integrals.

September 2024 Topics ,Riemaan integrability of Continuous and monotonic functions

Matrices,Different properties of matrices,Open sphere,Closed sphere,
Learning Objective:- Students will be able to learn Matrices and all its properties

Oct 2024

Topics- Limit point and closure of a set,Convergent sequence,Cauchy sequence in a metric space

Learning Objective:- Students will be able to learn about all properties of matrices.

November 2024:

Revision of syllabus

Ravinder
21/8/24

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. Ravinder
Class and Semester: B.A. 1st year (1st Semester)
Subject :Mathematics   Course Code :B23MAT 101
Paper: Calculus

July 2024:-

Topics:- Definition of limit and continuity of real valued functions.
Learning Objectives:-Students should be able to define limit and continuity

---

August 2024

Topics :- Types of discontinuities,Differentiability of functions,Indeterminate forms,Successive differentiation,Leibnitz theorem,Taylor and Maclaurine series expansion with different forms of remainder

Learning Objective:- Students will able to learn about continuity and differentiability of functions

---

September 2024

Topics : .Asymptotes :Horizontal,Vertical and Oblique asymptotes.Asymptotes of polar curves,Intersection of a curve and its asymptotes,Curvature and radius of curvatureof curves.Centre of curvature and circle of curvature

Learning Objective:- Students will be able to learn about Asymptotes and curvature.

Oct 2024

Topics- Multiple points,Node,Cusp,Conjugate pointtests Test for concavity and convexity.,Points of Inflexion,Tracing of curves and Reduction Formulae.

Learning Objective:- Students will be able to learn about all properties of matrices.

November 2024:   Topics:

Rectification,Intrinsic equation of a curve,
Quadrature,

Revision of syllabus

Ravinder
21/5/24

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. SURKSHA

Class and Semester: B.A. 3rd year (5th Semester)

Course Code: BM -353

Paper: NUMERICAL ANALYSIS

July 2024:-
Topics:-
Finite Differences operators and their relations. Finding the missing terms and effect of error in a difference tabular values. Interpolation with equal intervals: Newton's forward and Newton's backward interpolation formulae .

Learning Objectives:- Students will be able to learn about Newton's forward and Newton's backward interpolation formulae

August 2024
Topics Interpolation with unequal intervals: Newton's divided difference, Lagrange's Interpolation formulae, Hermite Formula. Central Differences: Gauss forward and Gauss's backward interpolation formulae, Sterling, Bessel Formula. Probability distribution of random variables, Binomial distribution, Poisson's distribution, Normal distribution: Mean, Variance and Fitting.

Learning Objective:- Students will able to solve problems of Central Differences .

September 2024
Topics:-
Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections –I & II. Eigen Value Problems: Power method, Jacobi's method, Given's method, HouseHolder's method, QR method, Lanczos method.

Learning Objective:- Students will be able to learn about Numerical Differentiation

Oct 2024
Topics-, Numerical Integration: Newton-Cote's Quadrature formula, Trapezoidal rule, Simpson's one- third and three-eighth rule, Chebychev formula, Gauss Quadrature formula. Numerical solution of ordinary differential equations: Single step methodsPicard's method.

Learning Objective:- Students will be able to learn about Numerical Integration.

November 2024:
Topics:- Taylor's series method, Euler's method, Runge-Kutta Methods. Multiple step methods; Predictor-corrector method, Modified Euler's method, Milne-Simpson's method

Learning Objective:- Students will able to learn about problems of Euler's method, Runge-Kutta Methods .

Chera
13/08/2024

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor: Mrs. SURKSHA

Class and Semester: B.A. second year (3rd Semester)

Course Code: B23-MAT-301

Paper: Differential Equations-1

July 2024:-
Topics:-

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

Learning Objectives:- Students will be able to learn about ordinary differential equations.

August 2024

Topics :- 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.

Learning Objective:- Students will able to solve problems of Exact differential equations and orthogonal Trajectories.

September 2024
Topics:-

Solutions of linear ordinary differential equations with constant coefficients, linear non-homogeneous differential equations. Linear differential equation of second order with variable coefficients. Method of reduction of order, method of undetermined coefficients, method of variation of parameters. Cauchy-Euler equation

Learning Objective:- Students will be able to learn about linear ordinary differential equations
.

Oct 2024

Topics- Solution of simultaneous differential equations, total differential equations. Genesis of Partial differential equations (PDE), Concept of linear and nonlinear PDEs. 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 $q = \partial z/\partial y$

Learning Objective:- Students will be able to learn about Partial differential equations

November 2024:

Topics:- 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

Learning Objective:- Students will able to learn about problems on Second Order Partial Differential Equations

13/08/2024

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. SURKSHA

Class and Semester: B.A. first year (Ist Semester)

Course Code: B-21- VAC-101

Paper: Human Values and Ethics

July 2024:-

Topics:- Understanding the need, content and process for Value Education, Classification of Value Education, understanding Personal Values, Social Values, and Moral Values& Spiritual Values;

Learning Objectives:-Students should be aware of the difference among skills, values and ethics and their respective needs in life.

August 2024

Topics :- Understanding the difference between ideology and values.
Understanding Harmony with self, Society and Nature.Meaning and nature of human values;
Significance of human values in life;Relation between values and ethics.
Relevance of Human values: Integrity, Empathy, Loksangrah, Brahmvihara.
Theory of Naya (Jainism), Deontology, Virtue Ethics, Utilitarianism

Learning Objective:- Students will able to learn meaning and nature of human values;

September 2024

TopicsUnderstanding the relationship among: Self, Identity and Personality.
Understanding Integrated Personality – with the three gunas theory of Sankhya, the four Antah-karanas (inner instruments) in Yoga, and Panchkosha (five sheaths) in Upanishad.Approaching comprehensive understanding of well-being and its relation to Happiness.

Learning Objective:- Students will be able to learn about Self, Identity and Personality.

Oct 2024

Topics- Nature, characteristics and scope of professional ethics; Types of Professional Ethics;
ProfessionalValues: Trusteeship, Inclusiveness, Commitment, Sustainability, Accountability, Transparency, Impartiality.
Values for Global Citizenship: Equality, Justice, and Human Dignity.
Learning Objective:- Students will be able to learn about Professional
Ethics and ProfessionalValues.

November 2024:

Nature and need of competency based education; Types of Competencies,
partnership building, Core Competencies: communication, teamwork,
planning and achieving goals,
Functional Competencies: analytical thinking, knowledge sharing and learning, decision making,

Learning Objective:- Students will able to learn about types of Competencies.

13/08/2024

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. SURKSHA

Class and Semester: B.Com. first year (1ˢᵗ Semester)

Course Code: B23-COM-104

Paper: Business Mathematics-I

July 2024:-

Topics:-

Set Theory: Representation of sets, equivalent sets, power set, complement of a set. Venn Diagrams: Union and intersection of sets:

 Learning Objectives:- Students will be able to learn about Set Theory.

August 2024

Topics :- De-Morgan's laws; Logical statements and truth tables.
    Logarithms: Laws of operation, log tables ,Arithmetic and geometric progression .

 Learning Objective:- Students will able to solve problems of set theory and A.P.and G.P. progression.

September 2024

Topics:-

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. 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

Learning Objective:- Students will be able to learn about Matrices.

Oct 2024

Topics- 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),

 Learning Objective:- Students will be able to learn about Compound
                    interest and annuities

November 2024:

Topics:- valuation of simple loans and debentures, problems related to sinking funds.

 Learning Objective:- Students will able to learn about problems on annuities.

13/08/2024

LESSON PLAN
July 2024 to Nov 2024 (up to odd session)

Name of the Assistant/Associate Professor:Mrs. SURKSHA

Class and Semester: B.A. first year (1ˢᵗ Semester)

Course Code: B23-SEC-225

Paper: Numerical Ability Enhancement Skills

July 2024:-
Topics:-

Real number system, Operations on numbers, Tests for divisibility of natural numbers, Decimals, Fractions, Square roots, Cube roots, Surds and indices, Use of BODMAS.

Learning Objectives:- Students will be able to learn about Real number system.

August 2024

Topics HCF, LCM of integers, Ratio and Proportion, Progressions: Arithmetic Progression, Geometric Progression, Harmonic Progression with their simple and basic practical applications, Number series completion

Learning Objective:- Students will able to solve problems of Number series .

September 2024
Topics:-

Percentage, Profit & Loss, Alligation or mixture, Average, Average speed problems,

Learning Objective:- Students will be able to learn about Percentage, Profit & Loss.

Oct 2024

Topics-. Area of Quadrilaterals (Parallelogram, Square, Rectangle, Rhombus, Trapezium).Volume and surface area of Cube, Cuboid, Cylinder, Cone, Sphere and Hemisphere

Learning Objective:- Students will be able to learn about Area of Quadrilaterals

November 2024:

Topics:- Calendar,Logarithms

Learning Objective:- Students will able to learn about problems of Calendar

13/08/2024