

Programme Specific Outcomes and Course Outcomes
Department of Mathematics and Statistics

Programme Specific Outcomes	PSOs of B.Sc. Mathematics PSO1. Understand Group Theory, Ring Theory and Fields and apply in problems. PSO2. Understand the basic concept of Differential Equations of various types and apply in various real life problems. PSO3. Understand the Geometrical Interpretations of 2D and 3D shapes and evaluate their area and volume. PSO4. Analyse real numbers and their applications by certain results and apply then in various pure problems. PSO5. Analyse numerical problems and apply in various problems by different methods. PSO6. Understand the basic definition of Graph Theory, Tree and Boolean Algebra and analyse their application.
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Course Outcomes	COs of the course “Algebra” (B.Sc. I Year)
	CO1 Understand concepts of matrices, system of linear equation and their consistency, using by rank.
	CO2 Understand different methods to find the solution of cubic equations.
	CO3 Understand basic concept of group subgroup, cyclic group, permutation group etc. and analyse their applications.
	CO4 Apply Lagrange’s theorem and understand the concept of normal sub group, centre of group etc.
	CO5 Apply Cayley theorem of finite groups.
	COs of the course “Calculus” (B.Sc. I Year)
	CO1 Understand concepts of arc length and Geometrical interpretation of results obtained from it.
	CO2 Understand the concepts of Asymptotes points of inflexion and apply them in curve tracing.
	CO3 Apply Beta and Gamma function in quardature and rectification.
	CO4 Understand the concept of differential equation and their types and analyse their applications.
	COs of the course “Geometry” (B.Sc. I Year)
	CO1 Identify the nature of conic of second and third degree.
	CO2 Geometrical properties of ellipse and hyperbola as well as 3-D shapes
	CO3 Interpret the relation between plane and straight line.
CO4 Evaluation of principal plane and direction of conics.	
COs of the course “Advanced Calculus” (B.Sc. II Year)	
CO1 Understand basic concepts of continuity important theorems.	
CO2 Concepts of partial differentiation and its applications.	
CO3 Evaluate double and triple integrals and their applications.	
CO4 Understand vectors & scalars quantity, evaluate of gradient, divergence and curl. Some important vector identity.	
CO5 Understand Gauss’s theorem, Stoke’s theorem and Green’s theorem and their applications.	

COs of the course “Differential equations”(B.Sc. II Year)

CO1 Understand the concept of exact, simultaneous and total differential equation and analyse their applications.

CO2 Evolution of solution of linear differential equation with variable coefficients by various approach.

CO3 Classify the partial differential equation and evaluate their solution using different approaches.

CO4 Analyze numerical solution of differential equation.

COs of the course “Mechanics” (B.Sc. II Year)

CO1 Finding resultant of coplanar forces and study equilibrium of bodies under three or more forces.

CO2 Interpretation of virtual work by forces.

CO3 Study the projective motion of various particles.

CO4 Finding velocity and acceleration in various direction and study rectilinear motion.

CO5 Study the motion of particle in resisting medium.

COs of the course “Real Analysis” (B.Sc. III Year)

CO1 Understand the concepts of real number and analyse their properties.

CO2 Study sequence, series and their applications.

CO3 Apply Riemann integrals in evaluation of some integrals.

CO4 Understand the concept of uniform convergence and study their application.

COs of the course “Abstract Algebra” (B.Sc. III Year)

CO1 Understand the concept of ring theory and their applications.

CO2 Study the concept of homomorphism and isomorphism of rings and their applications.

CO3 Evolution of examples of vector spaces and related problems.

CO4 Apply Sylvester law of nullity in linear transformations.

COs of the course “Discrete Mathematics” (B.Sc. III Year)

- CO1 Understand the basic concept of sets and propositions, permutations and combinations.
- CO2 Understand the basic of relations and functions, Pigeon Hole principle graphs and related theorems.
- CO3 Understand the basic concept of trees and finite state machines.
- CO4 Understand the basic concept of Recurrence relations solution by the method of generation functions.
- CO5 Basic concept of Boolean algebra Lattices, Duality, Digital network switching circuits.

COs of the course “Numerical Analysis and Operation Research” (B.Sc. III Year)

- CO1 Study the interpolation methods of equi-distance and unequal distance intervals.
- CO2 Discusses the numerical integration methods and their derivations.
- CO3 Understand the concept of linear programming problems and methods of solving it.
- CO4 Apply assignment and transportation problem in various physical problems.

COs of the course “Mathematical Statistics” (B.Sc. III Year)

- CO1 Understand the basic concept of probability, independent events and related problems.
- CO1 Understand the basic of Random variables, distribution functions, density functions.
- CO1 Understand the basic concept of theoretical probability distribution and related theorems.
- CO1 Understand the basic definition of Mathematical expectation, moments and related theorems.
- CO1 Understand the basic concept of curve fitting by the least square principle, fitting of straight line and parabola and regression.