

Programme: B.Sc. (Mathematics)

POs: At the end of the programme, graduates would be able to

1. Enhance the knowledge of student in all basic sciences.
2. Identify, formulate and develop solutions to computational challenges.
3. Develop scientific temper and think in a critical manner.
4. Build up progressive and successful career in academics, industry and society.
5. Develop students abilities and aptitudes to apply the mathematical ideas.

PSOs : Upon completion of the programme successfully, students would be able to

1. Understand major concepts in all disciplines of Mathematics
2. Formulate and develop Mathematical arguments in a logical manner
3. Gain good knowledge and understanding in advanced Mathematics
4. Create an awareness of the impact of Mathematics on the environment, society and development outside the scientific community.
5. Create sensitivity towards environmental concerns and contribute in the development of nation

Programme : B.Sc.-I (Mathematics) Semester- I

DSC-I Algebra and Trigonometry

Cos: After completing this course, students would be able to

1. Find inverse and normal form of matrices.
2. Evaluate the characteristic equation, eigenvalue and corresponding eigenvector of a given matrix
3. Evaluate relation between the roots and coefficients of equations .
4. To study application of De Moivre's theorem .
5. Compute summation of trigonometric series.

DSC-II / Mathematics Differential and Integral Calculus

Cos: After completing this course, students would be able to

1. Define limit and study the basic properties.

2. Classify continuity and discontinuity of the functions.
3. Solve the differentiability and l'hospital rule with their applications.
4. Describe the geometrical applications of mean value theorems.
5. Evaluate the reduction formulae for integration.

DSC-III / Mathematics Ordinary Differential Equations

COs: After completing this course, students would be able to

1. Solve first order differential equations using different techniques.
2. Solve higher order differential equations and orthogonal trajectories.
3. Calculate complementary function and particular integral of the second order differential Equation
4. Describe the different methods to solve second order differential equations.
5. Illustrate applications of differential equations.

DSC –IV/ Mathematics Vector Analysis and Geometry

COs: After completing this course, students would be able to

1. Interpret the vectors, their products, differentiation and integration.
2. Determine curvature and torsion.
3. Apply the concepts of divergence, curls which are useful in physics.
4. Describe the different forms of sphere and properties.
5. Discuss the equations of cone and cylinder.

Class:-B.Sc. IInd Year
Semester-IIIrd

DSC V:- Advanced Calculus

Cos- After completing this course, students would be able to-

1. Get knowledge of basic principles of limit and continuity, Taylor's theorem.
2. Understand Lagrange's multipliers method and Jacobian.
3. Understand the concept of improper integral and Beta-Gamma function.
4. Learn the definition of sequence and series and Sandwich theorem.
5. Learn various tests for convergence and divergence of series.

DSC VI:- Partial Differential Equations

Cos- After completing this course, students would be able to-

1. Study partial derivatives, differential equation, real valued functions of two variables and solve the system of homogeneous functions.
2. Learn to evaluate partial differential equations, solution of some special type of equations
3. Learn to solve methods of partial differential equation of second and higher order.
4. Students will be familiar with techniques of calculus of variations.
5. Recognize various methods of separation of variables.

Class:-B.Sc. IInd Year
Semester-IVth

DSC VII:- Elements of Algebra

Cos- After completing this course, students would be able to-

1. Learn the concept of Group, Subgroup and Cosets.
2. Explain the significance of the notations of Cosets, Normal subgroups and Quotient group.
3. Learn the concept of Homomorphism & Isomorphism and its Theorem.
4. Study the properties of Ring and Ideals and Integral domain.
5. Familiar with Fundamental concepts of Number theory.

DSC VIII- Classical Mechanics

Cos- After completing this course, students would be able to-

1. learn radial and transverse component of velocities and acceleration.
2. learn to explain Degree of freedom, Generalized co-ordinates and constraints.
3. learn to expressing the central force motion and areal velocity.
4. explain the significance of coplanar forces, triangle law of forces, parallel forces and equilibrium forces.
5. learn to find work and energy, virtual work and uniform catenary.

Class:-B.Sc. IIIrd Year
Semester-Vth
Paper:-I X Mathematical Analysis

Cos- After completing this course, students would be able to-

1. Get knowledge of basic principles of Riemann Integral, Improper integrals
2. Understand Analytic function and its application.
3. Understand the concept of Metric space.
4. Learn various tests for convergence of Improper integrals.

Paper:- X- Mathematical Methods

Cos- After completing this course, students would be able to-

1. Learn to evaluate Laplace transform, Fourier transform of various functions
2. Understand Analytic function and its application.
3. Understand the concept of Fourier Series, Legendre's equation, Bessel's equation.
4. Learn concept of Generating functions, Recurrences relations.

Class:-B.Sc. IIIrd Year
Semester-VIth
Paper:- XI Linear Algebra

Cos- After completing this course, students would be able to-

1. Understand the concept of vector spaces, Subspaces, Basis etc.
2. Relate matrices and linear transformations, compute Eigen values and Eigen vectors of linear transformations
3. Learn properties of inner product spaces and determine orthogonality in inner product spaces.
4. Create orthogonal and orthonormal bases: Gram-Schmidt process and use bases and orthonormal bases to solve application problems.

Paper:- XII Special Theory of Relativity

Cos- After completing this course, students would be able to-

1. Understand the concept of Special Theory of Relativity.
2. Learn Lorentz transformation and its applications, mass energy relation, relativistic dynamic and its applications..
3. Study Special theory of relativity and its applications..
4. Understand Explain relativistic momentum and Einstein field equations.

HOD
(Mathematics)