

Department of Mathematics

Program Outcomes

B. Sc. Mathematics

Student will be able to:

Analyze, test, interpret and form Independent Judgments in both endemic and non-academic contexts.

Recognize and appreciate the connections between theory and applications.

PO1- Have an appropriate set of professional skills to ensure a productive career.

PO2- Work effectively in a multi-disciplinary environment.

PO3- Be prepared for life-long learning.

PO4- Exhibit positive attitudes and values toward the discipline, so that they can contribute to an increasingly complex and dynamic society.

PO5- Develop effective communication skills in English and regional/national Language.

PO6- Communicate effectively with whom they are interacting and the society to make effective presentations, and give receive clear instructions.

PO7- Function effectively as an individual, and as a member or leader in diverse teams.

Program Specific Outcome

B. Sc. Mathematics

Student will be able to:

PSO1- Be familiar with different areas of Mathematics.

PSO2- Construct abstract models using appropriate mathematical and statistical tools.

PSO3- Be prepared to use mathematics. Not only in the discipline of mathematics, but also in other disciplines and in their future endeavours.

PSO4- Recognize what constitutes mathematical thinking. Including the ability to produce and judge the validity of rigorous mathematical arguments.

PSO5- Identify suitable existing methods of analysis, if any, and assess his/her strengths and weaknesses in the context of the problem being considered.

PSO6- Develop the skills necessary to formulate and understand proofs and to provide justification.

PSO7- Think critically and communicate clearly mathematical concepts and solution to real-world problems.

PSO8- Understand the Concepts of algebra which include equations numbers and algebraic structures.

PSO9- Students will be able to use concepts of analysis in solving problem. The concept include sets, numbers, functions and convergence.

PSO10- Understand mathematics ideas from basic axioms.

PSO11- Identify the application of mathematics in other disciplines and society.

PSO12- On completion of the program the Students are well poised to pursue careers in academia, industry

and other areas of mathematics.

Course Outcome

B.Sc. - I

Algebra And Trigonometry

After completing this course the learner should be able to:

CO1- To find the inverse of matrix by Cayley Hamilton theorem.

CO2- To find the Descartes' rule of sign and solutions of cubic equation (Carton's Method)

Calculus

After completing this course the learner should be able to:

CO1- Find the higher order derivative of the product of two functions.

CO2- Expand a function using Taylor's and McLaurin's series.

CO3- Learn about partial derivatives its applications.

Vector Analysis and Geometry

After completing this course the learner should be able to:

CO1- Represent vectors analytically and geometrically and compute dot and cross products for presentations of lines.

CO2- Analyse vector functions to find derivatives, tangent lines, integrals, arc length and curvature.

CO3- Compute limits and derivatives of function of 2 and 3 variables.

CO4- Evaluate double and triple integral for area volume.

CO5- Differentiate vector fields.

B.Sc.- II

Advanced Calculus

After completing this course the learner should be able to:

CO1- Compute double integrals, application to area and volume, Green's theorem in the plane and the change of variables in double integrals.

CO2- Understand basic notions such as derivative of the scalar field w.r to vector field gradient of scalar field, paths and line.

CO3- Recognize fundamental vector product, area of various parametric surfaces.

Differential Equation

After completing this course the learner should be able to:

CO1- Obtain an integrating factor which may reduce a given differential equation into an exact one and eventually provide its solution.

CO2- Method of solution of the differential equation.

CO3- Solve differential equations using the Laplace transform technique.

Mechanics

After completing this course the learner should be able to:

CO1- Relative motion inertial and non-inertial reference frames.

CO2- Parameters defining the motion of mechanical system and their degree of freedom.

CO3- Study of the interaction of forces between solids in mechanical systems.

CO4- Centre of mass and inertia tensor and mechanical systems.

CO5- Application of the vector theorems of mechanics and interpretation of their results.

B.Sc. - III

Analysis

After completing this course the learner should be able to:

CO1- Learns various field axioms the Archimedean property, triangle and Cauchy Schwartz inequality.

CO2- Extend the idea to set theory, functions, countable and uncountable sets.

CO3- Examine the convergence of any sequence in a metric space.

CO4- Relate function to point set topology.

Abstract Algebra

After completing this course the learner should be able to:

CO1- Analyze and demonstrate example of subgroups, normal subgroups and quotient groups.

CO2- Analyze and demonstrate example of ideals and quotient rings.

CO3- Use the concepts of isomorphism and homomorphism for groups and rings.

Discrete Mathematics

After completing this course the learner should be able to:

CO1- Study the concept of Relation and functions.

CO2- Classify the concept of Lattices and Boolean Algebra.

CO3- Create structural designs using patterns of graphs in graph theory.