

Department of Mathematics

Programme Outcome

B.Sc. (Mathematics)

On completion of the programme, students will be able to

- (1) Create, interpret and analyze graphical representation of functions and equations.
- (2) Develop the knowledge of create Mathematical models to solve real-world problems.
- (3) Understand the basic concepts, fundamental principles and Mathematical theories related to various mathematical phenomena and their relevance in day-to-day life.
- (4) Develop the knowledge and understanding of axiomatic approaches in pure and applied Mathematics.
- (5) Develop mathematical skill to solve problems.

M.Sc. (Mathematics)

On completion of the programme, students will be able to

- (1) Solve problems in areas of mathematical science.
- (2) Develop the skill of creativity and independence of thinking.
- (3) Provide high quality of education in Mathematics within an environment of teaching.
- (4) Apply knowledge of Mathematics to identify, analyze problems and to provide effective solutions in the area of Mathematics.
- (5) Inculcate skills to excel in the fields of Mathematics and its enabled services (Government And Private sectors), Teaching and Research.
- (6) To crack competition examinations, lectureship and fellowship examination

Programme Specific Outcome:

B.Sc. (Mathematics)

On completion of the programme, students will be able to

- (1) Evaluate theories, hypothesis, methods and evidence within their proper contexts.
- (2) Develop proficiency in the analysis of complex mathematical problems.
- (3) Select and interpret information from the range of sources that includes books and the internet.
- (4) Provide systematic understanding of mathematical concepts, principles and theories along with their applications.
- (5) Formulate and develop mathematical problems in logical manner.

M.Sc. (Mathematics)

On completion of the programme, students will be able to

- (1) Understand the basic concepts of advanced Mathematics.
- (2) Communicate effectively and to improve their competency skills to solve real -world problem.
- (3) Develop the problem solving skill.
- (4) solve critical problems by applying Mathematical tools.
- (5) Provide a systematic understanding of the concepts and theories of Mathematics.

Course Outcome
Department of Mathematics
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First Year:

On completion of the course, students will be able to

- (1) Develop the knowledge of algebraic skill essential for the study of systems of matrix algebra, linear equations, eigen values and eigen vectors.
- (2) Apply mathematical methods involving arithmetic, algebra, geometry and graphs to solve problems.
- (4) Develop the knowledge for applying the concept and principles of Differential and integrals to solve problems.
- (5) Develop the skill of computation of integral using Gauss's, Divergence and Stoke's theorems.
- (6) Integrate functions of several variables over curves and surface.
- (7) Demonstrate the knowledge of the basic concepts of Geometry.
- (9) Solve algebraic equations of up to degree four.

Second Year:

On completion of the course, students will be able to

- (1) Develop the knowledge of the fundamental tools of calculus such as limit, sequence, continuity and differentiability of functions of two variables.
- (2) Identify a general method for constructing solutions of homogeneous linear differential equations with constant coefficients.
- (3) Distinguish between partial differential equation and ordinary differential equation.
- (4) Solve problems of motion of a particle in rough and smooth plane.
- (5) Develop the knowledge of Kepler's Law of motion.

Third Year:

On completion of the course, students will be able to

- (1) Understand the concept of vector space and inner product space.

- (2) Develop the knowledge of fundamental concepts of complex variables.
- (3) Understand improper integrals.
- (4) Understand the basic principle of Boolean algebra, set theory and logic.
- (5) describe computer programs in formal Mathematical manner.
- (6) Develop the knowledge of numerical method for approximating the solution of problems of Mathematics.

Course Outcome

Department of Mathematics

M.Sc. (Mathematics)

First Semester:

On completion of the course, students will be able to

- (1) Demonstrate knowledge and understanding of fundamental concepts of Algebra including groups, subgroups, normal subgroups, homomorphism and isomorphism.
- (2) Describe fundamental properties of the real numbers and real-valued functions.
- (3) Understand the concept of topological space.
- (4) Analyze sequence and series of analytic function and type of convergence.
- (5) Construct simple mathematical proof and possess the ability to verify them discrete mathematics.

Second Semester:

On completion of the course, students will be able to

- (1) Critically analyze and construct mathematical argument related to the study of abstract algebra.
- (2) Construct Mathematical proof of basic results in real analysis.
- (3) Understand the concept of product topological space.
- (4) Think critically by proving mathematical results and establishing theorems from complex analysis.
- (5) Model and solve real world problems using graphs.

Third Semester:

On completion of the course, students will be able to

- (1) Understand the fundamental of measure theory and be acquainted the proofs of the fundamental theorems of underlying the theory of integration.
- (2) Recognize the major classification of PDEs and the qualitative difference between the classes of equations.
- (3) Develop the knowledge of C Programming.
- (4) Create linear programming models for assignment and transportation problems.
- (5) Develop the knowledge of fuzzy sets, fuzzy operations and fuzzy graphs.

Fourth Semester:

On completion of the course, students will be able to

- (1) Explain fundamental concepts of functional analysis and their role in modern Mathematics
- (2) Propose the best strategy using decision making models under uncertainty and game theory.
- (3) Implement file operations in C Programming for a given application.
- (4) Develop mathematical skills to analyze and solve integer programming and network models arising from the a range of applications.
- (5) Develop the knowledge of application of fuzzy sets.