

Department of Mathematics

M. Sc. Mathematics

Programme outcomes

Knowledge outcomes

After completing M.Sc. (Mathematics) Programme students will:

1. will get advanced knowledge of principles, methods and clear perception of innumerable power of mathematical ideas and tools.
2. will be able to apply their skills and knowledge, that is translate information presented verbally into Mathematical form select and use appropriate mathematical formulae or techniques in order to process the information and draw relevant conclusion
3. will be able to find out or analyze scientific reasoning for various things.
4. Student will get knowledge about both pure as well as applied mathematics branches.

Skill outcomes

After completing B.Sc. (Mathematics) Programme students will :

1. get adequate exposure to global and local concerns that explore them many aspects of Mathematical sciences
2. get a relational understanding of mathematical concepts and concerned structures
3. Communicate scientific information in a clear and concise manner both orally and in writing or through audio video presentations

Generic outcomes:

Students will

1. Develop a positive attitude towards mathematics as an interesting and valuable subject of study
2. Develop capacity of critical reasoning, theoretical applied and communication skills.
3. Develop abilities for logical thinking and problem solving.

Semester I (2019 pattern)

MTUT111: Linear Algebra

CO1. This is very basic course in Mathematics, and it has so many applications.

CO2. This course deals with vector spaces , linear maps ,inner products spaces, and higher topics in Linear algebra .

CO3. After learning this course students are ready to learn higher Mathematics, Statistics and computer languages.

CO4. This subject is prerequisite for many subjects.

MTUT112: Real Analysis

CO1: The mathematical maturity of students will develop.

CO2: The student will gain confidence in proving theorems and solving problems

CO3: Student will understand the generalized concept of measure and integration

CO4: Student will understand the need to generalize the concept of integration.

MTUT113: Group Theory

CO1. This course is combination of basic group theory and advanced group theory and gives proper understanding of groups.

CO2. This course deals with Group , symmetric group , Sylow Theorem and more such interesting topics

CO3. After learning this subject students are prepared for basic Algebra.

CO4. This course is beginning of algebra

CO5. With this course students are prepared to learn about higher mathematics, like prepared to learn about ring theory and field theory ,Galois theory etc.

MTUT114: Advanced Calculus

CO1. This course enhances theoretical view of students towards numerical methods.

CO2. This course will clear core linear algebra as well as numerical methods.

CO3. This course gives different types of methods to calculate LU factorization, floating point numbers.

CO4. This course enhances the quality and standards of Mathematical Education.

CO5. This course takes care of fast development in the knowledge of Mathematics.

MTUT115: Ordinary Differential Equations

CO1. Students will be able to solve the problems using multiple approaches and will learn to classify ODEs.

CO2. Students will demonstrate an understanding of the theory of ODEs and will work with a variety of applications of ODE.

CO3. Students will learn to visualize ODEs in graphical, numerical form.

CO4. Student will have a working knowledge of basic application problems described by second order linear differential equations with constant coefficients.

CO5. Students will understand the concepts of existence and uniqueness of solutions.

Semester II (2019 pattern)

MTUT121: Complex Analysis

CO1. This subject is part of analysis.

CO2. This subject gives more understanding about analysis in Mathematics

CO3. This course involved complex number , properties of them , analytic function , residues ,fundamental theorem.

CO4. With this course students are prepared to learn about advance complex analysis.

MTUT122: General Toplogy

CO1: Students will understand the concepts of metric spaces and topological spaces, and their role in mathematics.

CO2. Students will be able to prove basic results about completeness, compactness, connectedness and convergence within these structures.

CO3. Students will be able to demonstrate familiarity with a range of examples of these structures.

CO4. Students will be able to apply the theory in the course to solve a variety of problems at an appropriate level of difficulty.

CO5. Students will be able to write cohesive and comprehensive solutions to exercises and be able to defend their arguments.

MTUT123: Ring Theory

CO1. This subject is part of abstack algebra and continuation of Group theory

CO2. This course involved rings ,ideal, homeomorphism rings and introduction of module.

CO3. This subject is prerequisite for commutative Algebra and some advanced algebra.

CO4. This subject increase the thinking power of students in algebra.

MTUT124: Advance Numerical analysis

CO1. This course enhances theoretical view of students towards numerical methods.

CO2. This course will clear core linear algebra as well as numerical methods.

CO3. This course gives different types of methods to calculate LU factorization, floating point numbers.

CO4. This course enhances the quality and standards of Mathematical Education.

CO5. This course takes care of fast development in the knowledge of Mathematics.

MTUT125: Partial Differential Equations

After the completion of the course, Students will be able to

CO1 .Classify partial differential equations and transform into canonical form.

CO2.Solve linear partial differential equations of both first and second order.

CO3. Identify real phenomena as models of partial derivative equations.

CO4. Solve Elliptic, parabolic and Hyperbolic differential equations.

CO5. Apply specific methodologies, techniques to conduct research and produce innovative results in the area of specialization.
