**1.1 List of courses offered across          Programme during last five years**

| Program code | Program Name | Course code | Course Name | Course Outcome | Year of introduction |
|---|---|---|---|---|---|
| *I.A. / I.Sc. / P.U.* | *I.A. / I.Sc. / P.U.* | *?* | *I.A. / I.Sc. / P.U.* | | *1949* |
| B.Sc. (General) Mathematics | B.Sc. (General) Mathematics | MTMG | B.Sc. (General) Mathematics | | 1957 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | MTMH | B.Sc. (Honours) Mathematics | | 1960 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C1T | Calculus, Geometry & Differential Equation | Familiarize students with practical application of calculus. Enables students to handle geometrical entities like straight lines, planes, spheres. It helps students to solve differential equation. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C2T | Algebra | Learn to find roots of polynomial over real.Introduction to vector space and subspace. Give computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C3T | Real Analysis | It gives the basic idea of real number,limit of a sequence and seris. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C4T | Differential Equations & Vector Calculus | It helps to student to solve differnt types of differential equation.Familiarize students with practical application of vector calculus. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C5T | Theory of Real Functions & Introduction to Metric space | Knowledge about continuous function,uniform continuty,Roll's Theorem, MVT Theorem,Taylor's Theorem and basic notions of  metric space. | 2017 - 2018 |

| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C6T | Group Theory - 1 | It gives the basic idea of groups,subgroups,cyclic groups,normal subgroups and group homomorphisim. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C7T | Numerical Methods | Student will be able to solve Transcendental and polynomial equations,System of linear algebraic equations,Ordinary differential equations. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C7P | Numerical Methods Lab | Problem solve on numerical analysis by using Turbo C software. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C8T | Riemann Integration and Series of Functions | It gives the fundamental idea about Riemann Integration , Improper integrals,Fourier series,Power series. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C9T | Multivariate Calculus | Students would learn:- 1. Limit and contunity of functions of several variables,2.Double integration and triple integration,3 Divergence, curl, and Green's theorem ,Stok's theorem, and Divergence theorem. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C10T | Ring Theory and Linear Algebra I | Students would learn:- 1.Ring, subrings,ideal, integral domains and field.2.Ring homomorphisms and Isomorphism theorems I, II and III.3.Vector spaces and Linear transformations | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C11T | Partial Differential Equations & Applications | Student will be able to solve first order partial differential equations, quasi linear equations, vibrating string problem and heat conduction problem and problems related to particle dynamics | 2017 - 2018 |

| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C12T | Group Theory - II | Students would learn:-1.Automorphism,2.Internal and External direct products of groups,3.Group actions,Sylow's theorems,Cauchy's theorem,and Simplicity of An for n ≥ 5, non-simplicity tests. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C13T | Metric Spaces and Cpmplex Analysis | Learning and application of : 1.topology of metric spaces, 2. concept of convergence of a sequence and completeness, compactness,3. Limit and continuty of complex function.4.Familiarize students with analytic function, derivatives and Contour integrals of complex function. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | C14T | Ring Theory and Linear Algebra II | Introduction to rings and basic properties of rings and their homomorphisms and ideals. To learn the diagonalizability of matrices and linear transformations, geometry of inner product spaces and the properties of linear transformations on inner product spaces. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE1T | Linear Programming | It provides basic rules to student to solve Linear Programming problem like transportation problem, assignment problem. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE1T | Point Set Topology | Students would learn about countable,conncted and compact set in R | 2017 - 2018 |

| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE1T | Theroy of Equations | Mainly the course is designed so as to exemplify the applications of theroy ofequations. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE2T | Probability and Statistics | To give students an acquaintance with the axiomatic development theory of probability &Statistics and develop a mathematical theory with the help of induced probability space and distribution functions | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE2T | Boolean Algebra and Automata Theory | It imparts the knowledge about switching circuits and its application. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE2T | Portfolio Optimization | It helps to take various financial decisions involving risk free assets and utilisation of funds | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE3T | Mechanics | It gives an idea about motion of artificial satellites and three dimentional forces. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE3T | Number Theory | Students would be able to know arithmetic functions,primitive roots and quadratic reciprocity law | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE3T | Industrial Mathematics | This content is based on mathematics of X-ray CT scan based on the knowledge of calculus. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE4T | Differential Geometry | It helps student to know about the surfaces and space curves. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE4T | Mathematical Modelling | Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | DSE4T | Bio Mathematics | It gives the idea about mathematical biology and modeling process. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | SEC1T | Objective Oriented Programming in C++ | It provides basic rules regarding Programming in C++ | 2017 - 2018 |

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|---|---|---|---|---|---|
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | SEC1T | Logic and Sets | Formulate and develop mathematical arguments in a logical manner. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | SEC2T | Graph Theory | Students would learn about different types of graph, Eulerian circuits,Hamiltonian cycles and solve travelling salesman's problem. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | SEC2T | Computer Graphics | It gives an idea about computer graphics. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | SEC2T | Operating system: Linux | It provides basic rules regarding Programming in Operating system: Linux | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE1T | Calculus, Geometry & Differential Equation | Familiarize students with practical application of calculus. Enables students to handle geometrical entities like straight lines, planes, spheres. It helps students to solve differential equation. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE2T | Algebra | Learn to find roots of polynomial over real.Introduction to vector space and subspace. Use computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE3T | Differential Equations & Vector Calculus | It helps to student to solve differnt types of differential equation.Familiarize students with practical application of vector calculus. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE3T | Group Theory I | It gives the basic idea of groups,subgroups,cyclic groups,normal subgroups and group homomorphisim. | 2017 - 2018 |

| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE3T | Theory of Real Functions & Introduction to Metric space | Knowledge about continuous function,uniform continuty,Roll's Theorem, MVT Theorem,Taylor's Theorem and metric space. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE4T | Numerical Methods | Student will be able to solve Transcendental and polynomial equations,System of linear algebraic equations,Ordinary differential equations. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE4P | Numerical Methods Lab | Problem solve on numerical analysis by using Turbo C software. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE4T | Partial Differential Equations & Applications | Student will be able to solve first order partial differential equations, quasi linear equations, vibrating string problem and heat conduction problem. | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE4T | Ring Theory and Linear Algebra I | Students would learn:- 1.Ring, subrings,ideal, integral domains and field.2.Ring homomorphisms and Isomorphism theorems I, II and III.3.Vector spaces and Linear transformations | 2017 - 2018 |
| B.Sc. (Honours) Mathematics | B.Sc. (Honours) Mathematics | GE4T | Multivariate Calculus | Students would learn:- 1. Limit and contunity of functions of several variables,2.Double integration and triple integration,3 Divergence, curl, and Green's theorem ,Stok's theorem, and Divergence theorem. | 2017 - 2018 |

| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSC-1AT(CC-1) | Differential Calculus | Student will be to understand differentiation and fundamental theorem in differentiation and various rules. Geometrical representation and problem solving on MVT and Rolls theorem. Finding extreme values of function. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSC1BT(CC-2) | Differential Equations | It helps student to solve differnt types of differential equation. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSC1CT(CC-3) | Real Analysis | It gives the basic idea of real number,limit of a sequence and seris. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSC1DT(CC-4) | Algebra | It gives the basic idea of groups,subgroups,cyclic groups,normal subgroups and group homomorphisim,Ring & Field. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE1T | Complex Analysis | Learning and application of  limit and continuty of complex function.Familiarize students with analytic function, derivatives and Contour integrals of complex function. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE1T | Matrices | This topics give computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE1T | Linear Algebra | Give computational techniques and algebraic skills essential for the study of systems of Linear equations, matrix algebra, vector spaces, eigenvalues and eigenvectors. | 2017 - 2018 |

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|---|---|---|---|---|---|
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE1T | Vector Calculus and Analytical Geometry | Familiarize students with practical application of vector calculus. Enables students to handle geometrical entities like straight lines, planes, spheres,cone. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE2T | Mechanics | One dimensional motion is aimed to be studied for simplest cases.Vectors algebra recapitulation is motivated so that the forces in 2D and 3D in Statics can be given a general treatment (Vectorial treatment is encouraged). | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE2T | Linear Programming | It provides rules to student to solve Linear Programming problem like transportation problem, assignment problem. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE2T | Numerical Methods | Student will be able to solve Transcendental and polynomial equations,System of linear algebraic equations,Ordinary differential equations. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | DSE2T | Integer Programming and Theory of Games | It provides basic rules to student to solve integer Programming problem and game theory | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC1T | Theory of Equations | Mainly the course is designed so as to exemplify the applications of theroy ofequations. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC1T | Logic and Sets | Formulate and develop mathematical arguments in a logical manner. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC1T | Boolean Algebra | It imparts the knowledge about switching circuits and its application. | 2017 - 2018 |

| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC2T | Graph Theory | Students would learn about different types of graph, Eulerian circuits,Hamiltonian cycles and solve travelling salesman's problem. | 2017 - 2018 |
|---|---|---|---|---|---|
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC2T | Integral Calculus | It provides basic rules evaluation of length and area of a curve in the plane and volumes and surfaces of solid. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC2T | Mathematical Finance | Understand, formulate and use quantitative models arising in social science, Business and other contexts. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC3T | Number Theory | Students would be able to know arithmetic functions.Learn about application of Euler's phi-function | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC3T | Bio-Matheatics | It gives the idea about mathematical biology and modeling process. | 2017 - 2018 |
| B.Sc. (General) in Mathematics | B.Sc. (General) in Mathematics | SEC3T | Mathematical Modelling | Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills. | 2017 - 2018 |