Class: B.A. – Ist Year	Semester-1 (ODD)
Subject: Mathematics	
Paper:BM – 111 : Algebra	
Paper : I(UG)	

S. No.	Course Outcomes
1.	Students will be able to understand about Symmetric, Skew symmetric, Hermitian and skew Hermitian matrices. Elementary Operations on matrices. Rank of a matrices. Inverse of a matrix. Linear dependence and independence of rows and columns of matrices. Row rank and column rank of a matrix.Eigenvalues, eigenvectors and the characteristic equation of a matrix. Minimal polynomial of a matrix. Cayley Hamilton theorem and its use in finding the inverse of a matrix.
2.	Students will be able to understand about Applications of matrices to a system of linear (both homogeneous and non–homogeneous) equations. Theorems on consistency of a system of linear equations. Unitary and Orthogonal Matrices, Bilinear and Quadratic forms.
3.	Students would have the understanding of the following topics Relations between the roots and coefficients of general polynomial equation in one variable. Solutions of polynomial equations having conditions on roots. Common roots and multiple roots. Transformation of equations.
4.	Students will have the idea of the concept of Nature of the roots of an equation Descarte's rule of signs. Solutions of cubic equations (Cardon's method). Biquadratic equations and their solutions.

Class: B.A. – Ist Year	Semester-1 (ODD)
Subject: Mathematics	
Paper:BM – 112 : calculus	
Paper : II(UG)	

S. No.	Course Outcomes
1.	In Unit 1, Students are made to learn about successive differentiation and its uses in Leibnitz's theorem and series expansion. They are able to understand differentiability and continuity and types of discontinuities.
2.	In Unit 2, students are able to understand asymptotes in Cartesian and polar coordinates. Along with this they are taught about curvature and test for concavity and convexity. Multiple points, cusps, nodes and conjugate points are also taught to help in curve tracing.
3.	In Unit 3, students are given detailed explanations about the methods of curve tracing in cartesian and polar coordinates. It helps in finding the lengths of curves in topics of rectification. Reduction formulas are taught in order to simplify the typical integrals.
4.	In Unit 4, students are taught about finding the areas of curves and area bounded by closed curves. Volumes and surface areas of solids of revolution are also taught.

Class: B.A. Ist Year	Semester-1(ODD)
Subject: Mathematics	
Paper:BM-113:Solid Geometry	
Paper : III(UG)	

S. No.	Course Outcomes
1.	In the Unit 1, students learn about the general equations of second degree, tracing of ellipse, hyperbola and parabola and also get to know about the confocal conics. They get to know whether a given second degree equation is a hyperbola or ellipse or parabola.
2.	In Unit 2,students are given introduction and details about sphere, cone, cylinder their properties ,coaxal system of spheres, enveloping cones, reciprocal system of cones, enveloping cylinder so that they also get to use it in real world.
3.	In unit 3, the topics of central conicoid, director sphere, polar plane of a pointare explained to the students.
4.	In unit 4, students learn about paraboloids, plane sections of conicoids, generating lines and reduction of second degree equations.

Class: B.A. Ist Year	Semester-2(Even)
Subject: Mathematics	
Paper:BM-121:Number Theory and Trignometry	
Paper : I(UG)	

S. No.	Course Outcomes
1.	In the Unit 1, Divisibility, G.C.D.(greatest common divisors), L.C.M.(least common multiple) Primes. Linear Congruences, Fermat's theorem.Wilson's theorem and its converse. The students will be able to know about basic knowledge of the number theory and its various elementary tools.
2.	In Unit 2, Complete residue system. Legendre symbols. Lemma of Gauss; Gauss reciprocity law. Greatest integer function [x]. The number of divisors and the sum of divisors of a natural number n (The functions $d(n)$ and $\sigma(n)$). The students will be able to use this methods in further higher studies.
3.	In unit 3, De Moivre's Theorem and its Applications. Direct circular and hyperbolic functions and their properties. The students will be able to get good knowledge of use of trigonometry.
4.	In unit 4, Inverse circular and hyperbolic functions and their properties. Logarithm of a complex quantity.Gregory's series. Summation of Trigonometry series. The Students will be able to solve problems related to summation and inverse & hyperbolic functions of trigonometry.

Class - B.A. Ist Year	Semester-2 (Even)
Subject-Mathematics	
Paper-BM-122:Ordinary Differential Equations	
Paper-II(UG)	

S.No.	Course Outcome
1	Explained the Differential equation,exact diff.eqn,solution of exact differential equation,integrating factor,number of integrating factors,equation of first order but not of first degree. Students have learnt how to solve exact and non exact differential equation and how to find the solution of the differential equation of first order but not of first degree.
2	Explained Orthogonal trajectories,orthogonal trajectories in cartesion co-ordinates,orthogonal trajectories in Polar co-ordinates,linear differential equation with constant coefficient ,homogenous linear equation. Students have learnt how to find orthogonal trajectories of curves ,how to solve linear differential equation with constant co-efficient and how to solve homogenous equation.
3	Explained the Linear differential equation of second order:-by changing the dependent variable ,by removing the first derivative and by changing the dependent variable,by changing the independent variable,by the method of variation of parameter,by method of undetermined coefficient . Students have learnt how to solve linear differential equation of second order by using different methods.
4	Explained the Ordinary simultaneous differential equation ,method to solve simultaneous differential equation with constant coefficient,total differential equation,method to solve total differential equation,method to solve homogenous equation. Student have learnt how to solve simultaneous and total differential equation

Class - B.A. Ist Year	Semester-2 (Even)
Subject-Mathematics	
Paper-BM-123:Vector Calculus	
Paper-III(UG)	

S.No.	Course Outcome
1	Students will be able to understand about the Scalar and Vector product of three vectors, Product of four vectors. Reciprocal vectors. Vector differentiation Scalar Valued point functions, Vector valued point functions, Derivative along a curve, Directional derivatives. Also solve the problems involving above concepts. CO1-Students will be able to find Product of vectors & their Differentiation.
2	Students will be able to understand about Gradient of a scalar point function, Geometrical interpretation of grad F, Character of gradient as a point function. Divergence and Curl of vector point function, Characters of Div f and Curl f as point function, examples. Gradient, Divergence and Curl of sums and product and their related vector identities. Laplacian operator. CO2-Students have learnt about gradient, divergence & curl of vectors and their characterstics.
3	Students would have the understanding of the following topics Orthogonal curvilinear coordinates, Conditions for orthogonality, Fundamental triad of mutually orthogonal unit vectors. Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates and Spherical coordinates. CO3- Students have learnt how to represent gradient, divergence, curl & laplacian operators in terms of orthogonal curvilinear, cylindrical & spherical co-ordinates.
4	Students will have the idea of the concept of Vector integration; Line integral, Surface integral, Volume integral. Theorems of Gauss, Green & Stokes and problems based on these theorems. CO4-Students have learnt about relation between line, volume & surface integral through gauss, green & stokes theorem.