Department of Mathematics

Course Outcomes

B. Sc-I Semester – I

- **Paper No. MAT 101: Differential Calculus.**
  - On successful completion of this programme the students will able to:

CO-1: identify the types of function.

CO-2: obtain a limit of a given function.

CO-3: identify whether the functions are continuous or discontinuous.

CO-4: derive different type of function by using appropriate methods.

CO-5: calculate n^{th} derivative of the product of two functions by using Leibnitz's theorem.

CO-6: understand the mean value theorem.

CO-7: understand the concept of partial derivatives and differentiate the composite and implicit number.

CO-8: understand use of differential operators.

- **Paper No. MAT 102: Differential Equation.**
  - On successful completion of this programme the students will able to:

CO-1: understand the difference between ordinary and partial differential equation.

CO-2: identify the order and degree of differential equations.

CO-3: check the given differential equation is Exact or Not.

CO-4: reduce the differential equation to linear form.

CO-5: obtain the solution of linear differential equations with constant coefficient.

CO-6: solve the linear differential equations with variable coefficients.

CO-7: Solve the differential equation with more than two variables.

CO-8: Derive the partial differential equation by the eliminating of constant and orbitary function.

B. Sc-I Sem–II

- **Paper No. MAT 201: Differential Integral.**
  - On successful completion of this programme the students will able to:

CO-1: use reduction formulae for integration of integrating by parts.

CO-2: obtain integration of algebraic rational function.

CO-3: obtain reduction formulae for integration of trigonometric function.

CO-4: apply fundamental theorem of internal calculus to solve definite integral as the limit of a sum.

CO-5: find out the area of plane region bounded by curve.

CO-6: find the length of curve.

CO-7: calculate the volume of a solid of revaluation.

Paper No. MAT 202: Geometry

- On successful completion of this programme the students will able to:

CO-1: transform the equation of the plane to normal form.

CO-2: classify bisectors of angles between two planes.

CO-3: find the length of perpendicular from a given to the given plane.

CO-4: transform the equation of a line to the symmetrical form.

CO-5: find the angle between a line of plane.

CO-6: find out the shortest distance between two given lines.

CO-7: calculate the length of a particular form a given point to the given line.

CO-8: obtain the equation of the sphere through a given circle.

CO-9: show the intersection of two spheres is a circle.

CO-10: find out the co-ordinates of the intersection of a sphere and line.

CO-11: study the standard forms of equations cones cylinders conoid.

B. Sc-II-Semester-III

Paper No. MAT 301: Number Theory

- on successful completion of this programme the students will able to:

CO-1: prove results involving divisibility and greatest common divisors.

CO-2: solving systems of linear congruences.

CO-3: find integral solutions to specified linear diophantine equations..

CO-4: apply Euler-Fermat's theorem to prove relations involving prime numbers.

CO-5: apply the Wilson's theorem.

Paper No. MAT 302: Integral transforms

- On successful completion of this programme the students will able to:

CO-1: understand relation between beta-gamma function.

CO-2: calculate the Laplace transform of standard functions from the definition.

CO-3: select and use the appropriate shift transforms in finding Laplace and inverse Laplace transform..

CO-4: apply Laplace transforms to solve differential equations.

CO-5: explain the relationship between Fourier transform and Laplace transform.

CO-6: use Fourier sine and Fourier cosine transform to solve the problem.

Paper No. MAT 303: Mechanics

- On successful completion of this programme the students will able to:

CO-1: prove axiom for equilibrium of two forces.

CO-2: understand law of parallelogram of forces and principal of the transmissibility of force.

CO-3: find the magnitude and direction of the resultant of any numbers of coplanar forces acting of point.

CO-4: understand equilibrium forces acting on a partial and use condition of equilibrium of the acting on a particle.

CO-5: solve problems by using Lami's theorem

CO-6: understand condition of equilibrium of forces acting on a rigid body.

CO-7: proves trigonometrical theorem.

CO-8: find centre of gravity of some uniform bodies.

B. Sc-II - Semester - IV

Paper No. MAT 401: Numerical Methods

CO-1: find real root of an algebraic equations by using bisection method of false position , Newton-Raphson Method and generalized Newton's Methods.

CO-2: solve problems by using different methods of interpolation.

CO-3: understand divided differences and use their properties for solving the problems.

CO-4: form an equation of the curve curve by evaluating the unknown constants with the help of the given data.

CO-5: find the solution of linear system of equations by using numerical method by direct interactive numerical method.

CO-6: use various Numerical methods for obtaining the solution of ordinary differential equations.

Paper No. MAT 402: Partial Differential Equations

CO-1: derive a partial differential equation by the eliminations of orbitary constants and orbitary functions.

CO-2: find the solution of Lagrange's linear partial differential equation.

CO-3: find complete integral of Non-linear partial differential equation of order one.

CO-4: obtain solution of Homogeneous and Non-homogeneous linear differential equation with constant coefficient.

CO-5: solve partial differential equations of second order by using Monge's methods.

Paper No. MAT 403 : Mechanics II

CO-1: find tangential and normal component of velocity and acceleration

CO-2: find radial and transversal component of velocity and acceleration.

CO-3: recognize scalar point function and vector point function.

CO-4: identify linear momentum and angular momentum.

CO-5: to study motion of projectile motion is a resisting medium.

CO-6: find areal velocity in central orbit.

B.Sc. III – Semester - V

Paper No. MAT 501: Analysis -I

CO-1: define sets functions and its type.

CO-2: determine whether the sequences convergent and divergent.

CO-3: determine whether the series is convergent and divergent.

CO-4: recognize conditional convergence and absolute convergent of the series.

CO-5: find the Jacobian of to give function.

CO-6: understand necessary and sufficient condition for a Jacobian.

CO-7: understand the definition of open set, closed set and their properties.

Paper No. MAT 502: Abstract Algebra -I

CO-1: define a group and give some examples of Group.

CO-2: defines normal and quotient Group.

CO-3: prove some preliminaries Lemma's of Group.

CO-4: study the Group Homo-morphism and Auto-morphism.

CO-5: define Ring and Give examples of Ring.

CO-6: recognize the different types of Ring.

CO-7: study the various properties of Ring.

Paper No. MAT 504: Ordinary and Differential Equation

CO-1: introduce function polynomials, complex series and exponential function.

CO-2: solve problem associated with linear differential equations of first order.

CO-3: Solve the value problems for second order linear differential equation with constant coefficient.

CO-4: identify linear dependence and linear independence.

CO-5: solve the non homogenious linear differential equations with constant coefficient of order.

Paper No. MAT 601: Analysis-II

CO-1: check the given defined function is a matrix for the set R.

CO-2: define open set and closed set.

CO-3: give proof of axioms based on open set and closed set.

CO-4: give example of connected sets complete matric space and compact matric spaces.

CO-5: define Riemann integral and give same examples of functions which are Riemann integral or not.

CO-7: define Fourier series and understand the properties of Fourier series for odd and even function .

CO-8: find Fourier series for the given function.

Paper No. MAT 602: Abstract Algebra

CO-1: define vectors spaces.

CO-2: understand elementary basic concepts of vector spaces and modulus.

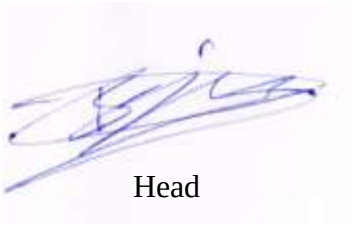
CO-3: give correct proof of axioms based on vector spaces and modulus.

Paper No. MAT 604: Ordinary Differential Equations

CO-1: find the complete solution of linear differential equation with variable coefficients.

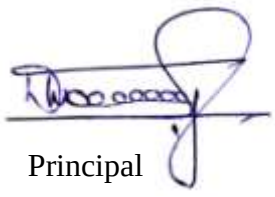
CO-2: apply Bessel's equation to solve second order linear differential equations with regular singular points.

CO-3: use Euler equation to solve linear differential equation with regular singular points.



Head

Department of Mathematics



Principal