COs: Mathematics

B.Sc. Mathematics Differential Equations

COL To understand homogeneous and separable first order differential equations

CO2 To understand the exact differential equations.

CO3. To understand homogenous linear equations with constant coefficient and variable coefficients

CO4: To find the solution of non-homogenous first order differential equations.

COS: To find the solution of Bernoulli's equation.

Geometry

CO1 To understand geometrical terminology for plane, right line, sphere, cylinder and cone

CO2. To know the geometrical results to find center and radius of the circle.

CO3 Students will be able to find equation of lines and planes in space.

CO4: Student will be able to find angle between two planes and length of perpendicular from a given point to a given line.

COS: Students will be able to identify parallel and perpendicular lines.

Differential and Integral Calculus

CO1 To develop the concepts of limit, function, continuity, discontinuity and derivative.

CO2: Students become familiar with hyperbolic functions, inverse hyperbolic functions, derivatives, and higher order differentiation.

CO3: Students understand the consequences of Rolle's Theorem and mean value theorem for differentiable function.

CO4: Students understand definite integrals as the limit of a sum.

COS: Student will be able to understand the concept of divergence, curl, gradient and it's applications

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Number Theory

CO1: Students will be able to find quotient and remainders from integer division.

CO2: Students apply Euclid's algorithm and backward substitutions.

CO3: Students understand the concept of congruence, residue classes and least residue.

CO4: Student will know the concepts addition and multiplication of integers modulo.

COS: Students will be able to solve linear congruence.

Numerical Methods.

C01: Student becomes familiar with numerical solutions of nonlinear equatioris in a single variable

CO2: Students will know the concepts-numerical interpolation and approximation of functions

CO3: Student can solve first order initial value problem using Euler's method.

CO4: Student can solve first order initial value problem using a second order Runge-Kutta Method.

COS: Students will be able to find numerical solution of ordinary differential equations.

Integral Transform and Partial differential Equations

CO1. Students understand the concept of beta and gamma functions and their applications.

CO2: Students are able use to Laplace transform to solve ordinary and partial differential equations

CO3: Students can apply properties of Laplace transform to solve examples.

CO4: Students will know the difference between linear and nonlinear partial differential equations.

COS. Student will be able to solve the linear and nonlinear partial differential equation by various methods like Lagrange's, Charpit's, Jacobi's, Monge's method.

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Mechanics (L&II)

CO1: Students understand the concepts – particle, rigid body, force, equilibrium etc.

CO2 Students can find the components of velocity & acceleration in a given direction.

CO3: Students follow the concepts momentum, angular momentum, work, energy and points functions in mechanics

CO4: Students will know the concept of projectile and motion of projectile.

COS: Students will know differential and pedal equations of central orbits and their applications.

Abstract Algebra (I & II)

CO1: Students will understand the number systems and algebraic structures.

CO2: Students will understand the concept of ring and special types of rings.

CO3: Students can identify the difference between homomorphism and isomorphism of a group.

CO4: Students will know and apply the concepts of linear dependence and linear independence of vectors.

COS: Students will be able to give the examples of inner product space.

Real Analysis (I & II)

COL: Students become familiar with terminology sets, elements, operations on sets, functions, operations on functions.

CO2. Students can define & recognize basic properties of field of real numbers.

CO3: Students can understand the concept of series of real numbers, convergence and Divergence

CO4: Students can understand metric space, continuous function on metric space and difference between open sets and closed sets.

COS: Students will be able define Riemann integral, Fourier series and their applications.

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Mathematical Statistics 1&ll

C01: To make students learn and understand the concept of Centre of tendency

CO2: Student is expected to have knowledge of the types and methods of

CO3: This course provides Knowledge about Index Numbers, its types and ‘uses.

CO4: To understand the procedure of application of Probability.

COS: This Course provides knowledge & ability among students for using statistical tools

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