DANTULURI NARAYANA RAJU COLLEGE
(Autonomous)
BHIMAVARAM, W.G.DIST, ANDHRA PRADESH, INDIA, PIN- 534202.
(Accredited at 'B^{++}' level by NAAC)
(Affiliated to Adikavi Nannaya University, Rajamahendravaram)

DEPARTMENT OF MATHEMATICS

SEMESTER-I: DIFFERNTIAL EQUATIONS

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Blooms Taxonomy Level
CO:1	Solve linear differential equations.	Apply –L3
CO:2	Convert Non-Exact homogeneous equations to Exact differential equations by using Integrating Factors.	Understand-L2
CO:3	Understand the methods of finding solutions of differential equations of the but not of the first degree	Understand-L2
CO:4	Solve higher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients.	Apply –L3
CO:5	Solve higher-order linear differential equations with non-constant coefficients	Apply –L3
CO:6	Understand the concept and apply appropriate methods for solving Differential equations	Understand –L2

SEMESTER-II: ANALYTICAL SOLID GEOMETRY

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Blooms Taxonomy Level
CO:1	Demonstrate knowledge of the plane and its applications.	Understand –L2
CO:2	Demonstrate knowledge 0f Right Line, angle between the line and a plane, and calculate Shortest distance between tow lines	Understand –L2
CO:3	Understand the properties of planes, lines, spheres and cones.	Understand –L2
CO:4	Solve problems on Orthogonality of two Spheres.	Apply –L3
CO:5	Solve problems relating to different types of Cones.	Apply –L3
CO:6	Explain properties and concepts in 3D solid geometry and use them in real life situations	Understand –L2

SEMESTER III: ABSTRACT ALGEBRA

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.	Understand-L2
CO:2	Understand a group by notion of a coset and apply Lagrange's theorem for finite groups.	Understand-L2
CO:3	Get the significance of the notation of a normal subgroups.	Understand-L2
CO:4	Study the homomorphisms and isomorphisms with applications.	Apply-L3
CO:5	Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems.	Understand-L2
CO:6	Understand the applications of ring theory in various fields.	Understand-L2

SEMESTER-IV: ANALYTICAL SKILLS

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Understand the basic concepts of arithmetic ability, quantitative ability, logical reasoning, business computations and data interpretation and obtain the associated skills.	Understand –L2
CO:2	Get competency in the use of verbal reasoning.	Understand-L2
CO:3	Apply the skills and competencies acquired in the related areas.	Apply-L3
CO:4	Obtain associated skills in business computations and data interpretation.	Understand-L2
CO:5	Solve problems pertaining to quantitative ability, logical and verbal reasoning.	Apply-L3

SEMESTER-IV: REAL ANALYSIS

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Understand about the real numbers and real valued functions.	Understand-L2
CO:2	obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series.	Understand-L2
CO:3	Test the continuity and differentiability and Riemann integration of a function.	Analyze-L4
`CO:4	Understand the geometrical interpretation of mean value theorems.	Understand – L2
CO:5	Understand the concepts of upper and lower Riemann sums and Riemann integrability	Understand – L2
CO:6	Apply First Mean Value Theorem to solve inequalities.	Apply-L3

SEMESTER-IV: LINEAR ALGEBRA

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Understand the concepts of vector spaces, subspaces, bases, dimension and their properties.	Understand-L2
CO:2	Understand the concepts of linear transformations and their properties.	Understand-L2
CO:3	Apply Cayley - Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods	Apply-L3
CO:4	Find the Eigen values and Eigen vectors for a square matrix	Understand-L2
CO:5	Understand the properties of inner product spaces and determine orthogonality in inner product spaces.	Understand-L2
CO:6	Apply Gram-Schmidt orthogonalisation process to find an orthonormal basis for given vectors.	Apply-L3

SEMESTER-V: NUMERICAL METHODS

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Understand the subject of various numerical methods that are used to obtain approximate solutions.	Understand-L2
CO:2	Understand various finite difference concepts and interpolation methods	Understand-L2
CO:3	Use appropriate approximation formulae to find the derivatives of a function from given data.	Apply-L3
CO:4	Apply interpolation formulae to compute the value of y for unequal intervals	Apply-L3
CO:5	Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.	Understand-L2
CO:6	Apply appropriate numerical methods to solve given ODEs.	Apply-L3

SEMESTER-V: MATHEMATICAL SPECIAL FUNCTIONS

COURSE OUTCOMES (COs):

Upon completion of the course, students will be able to:

COs	Course Outcome Statement	Level
CO:1	Understand the Beta and Gamma functions, their properties and relation between these two functions.	Understand-L2
CO:2	Obtain Power series solution for Ordinary differential equations	Understand-L2
CO:3	Solve Generating function and Rodrigues formula for Hermite polynomials.	Apply-L3
CO:4	Apply Euler-Maclaurin's summation formula to evaluate the definite integral.	Apply-L3
CO:5	Solve Orthogonality property and Recurrence formulae for Hermite polynomials.	Apply-L3
CO:6	Solve Bessel's equation series for n=0 and recurrence formulae for Bessel's function.	Apply-L3

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