V.V.GIRI GOVERNMENT DEGREE COLLEGE, DUMPAGADAPA

Department of Mathematics-2022-23

TitleofthePaper: DIFFERENTIAL EQUATIONS **Semester:I(60Hr)**

Courseoutcomes:

- At the end of the course, the student will be able to;
- **CO1**. Solve linear differential equations
- **CO2**. Convert non exact homogeneous equations to exact differential equations by using integrating factors•
- **CO3**. Know the methods of finding solutions of differential equations of the first order but not of the first• Degree.
- **CO4**. Solve higher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients.
- **CO5**. Understand the concept and apply appropriate methods for solving differential equations

Title of the Paper: THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY Semester:II (60Hr)

- **Courseoutcomes**; **:** At the end of the course, the student will be able to;

- **CO1.** . get the knowledge of planes..
- **CO2.** basic idea of lines, sphere and cones
- **CO3.** understand the properties of planes, lines, spheres and cones
- **CO4.** express the problems geometrically and then to get the solution.

Title of the Paper: ABSTRACT ALGEBRA SEMESTER –III (60Hr)

- **Courseoutcomes**; **:** At the end of the course, the student will be able to;
- **CO1.** . acquire the basic knowledge and structure of groups, subgroups and cyclic groups.
- **CO2.** get the significance of the notation of a normal subgroups
- **CO3. .** get the behavior of permutations and operations on them
- **CO4.** study the homomorphisms and isomorphisms with applications.
- . **CO5.** Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems.
- **CO5.** Understand the applications of ring theory in various fields

Title of the Paper: REAL ANALYSIS SEMESTER -IV(60Hr)

Course out comes; **:** At the end of the course, the student will be able to;

- **CO1.** . **.** get clear idea about the real numbers and real valued functions
- **CO2.** obtain the skills of analyzing the concepts and applying appropriate methods for testing
- **CO3. .** convergence of a sequence/ series. Test the continuity and differentiability and Riemann integration of a function.
- **CO4.** Know the geometrical interpretation of mean value theorems.

TitleofthePaper: : LINEAR ALGEBRA SEMESTER IV (60Hr)

Course out comes; **:** At the end of the course, the student will be able to;

- **CO1:**. understand the concepts of vector spaces, subspaces, basises, dimension and their properties
  - **CO2:**. .• understand the concepts of linear transformations and their properties
- **CO3:** apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher
- **CO4:** powers of matrices without using routine methods Learn the properties of inner product spaces and determine orthogonality in inner product spaces•

Title of the Paper: Numerical Methods **Semester: V**(60Hr)

Course Outcomes: At the end of the course, the student will be able to:

- **CO1:** Students after successful completion of the course will be able to 1. understand the subject of various numerical methods that are used to obtain approximate solutions
- **CO2:** Understand various finite difference concepts and interpolation methodS
- **CO3**: . Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.
- **CO4:** . Find numerical solutions of ordinary differential equations by using various numerical methods.
- **CO5**: Analyze and evaluate the accuracy of numerical methods.

TitleofthePaper: Mathematical Special Functions Semester:V(60Hr)

Courseoutcomes: At the end of the course, the student will be able to:

- **CO1:** Students after successful completion of the course will be able to: 1. Understand the Beta and Gamma functions, their properties and relation between these two functions, understand the orthogonal properties of Chebyshev polynomials and recurrence relations.

- **CO2:** . Find power series solutions of ordinary differential equations

- **CO3:** solve Hermite equation and write the Hermite Polynomial of order (degree) n, also find the generating function for Hermite Polynomials, study the orthogonal properties of Hermite Polynomials and recurrence relations

- .**CO4:** . Solve Legendre equation and write the Legendre equation of first kind, also find the generating function for Legendre Polynomials, understand the orthogonal properties of Legendre Polynomials.

- **CO5:** . Solve Bessel equation and write the Bessel equation of first kind of order n, also find the generating function for Bessel function understand the orthogonal properties of Bessel function