Y.A .GOVERNMENT DEGREE COLLEGE FOR WOMEN

Affiliated to Acharya Nagarjuna University Guntur

DEPARTMENT OF MATHEMATICS

COURSE OUTCOMES

COURSE-I: DIFFERENTIAL EQUATIONS

After successful completion of this course, the student will be able to

1. Solve linear differential equations

2. Convert non-exact homogeneous equations to exact differential equations by using integrating factors

3. Know the methods of finding solutions of differential equations of the first order but not of the first degree.

4. Solve higher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients

5. Understand the concept and apply appropriate methods for solving differential equations.

COURSE-2: THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY

After successful completion of this course, the student will be able to;

1. get the knowledge of planes

2. basic idea of lines, sphere and cone

3 .know about Enveloping cone of a sphere, right circular cone, equation of the right circular cone with a given vertex.

4. Know the Condition that a cone may have three mutually perpendicular generators; intersection of a line and a quadric cone

5. Understand the properties of planes, lines, spheres and cones.

6. Express the problems geometrically and then to get the solution.

COURSE-3: ABSTRACT ALGEBRA

After successful completion of this course, the student will be able to;

1. Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.

2. Get the significance of the notation of a normal subgroups.

3. Get the behavior of permutations and operations on them.

4. Study the homomorphisms and isomorphisms with applications.

5. Understand the ring theory concepts with the help of knowledge in group theory and to   prove the theorems

6. Understand the applications of ring theory in various fields.

COURSE-4: REAL ANALYSIS

After successful completion of this course, the student will be able to

1. Get clear idea about the real numbers and real valued functions.

 2. Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence/ series.

3. Test the continuity and differentiability and Riemann integration

4. Know the geometrical interpretation of mean value theorems.

5. Know about sequences and series

COURSE-5: LINEAR ALGEBRA

After successful completion of this course, the student will be able to;

 1. Understand the concepts of vector spaces, subspaces, basises, dimension and their properties

2. Understand the concepts of linear transformations and their properties

3. Apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine

 4. Learn the properties of inner product spaces and determine orthogonality in inner product spaces.

5. Learn to find an orthonormal basis of an inner product space.

COURSE-6A: Numerical Methods

1. Understand the subject of various numerical methods that are used to obtain approximate solutions

2. Understand various finite difference concepts and interpolation methods.

3. Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.

4. Find numerical solutions of ordinary differential equations by using various numerical methods.

5. Analyze and evaluate the accuracy of numerical methods.

COURSE-7A: Mathematical Special Functions

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.

2. Find power series solutions of ordinary differential equations.

3. 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.

4. 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.

5. 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 unction.