

**T.R.R. GOVERNMENT DEGREE COLLEGE, KANDUKUR**  
**PRAKASAM Dist., Andhra Pradesh-523105**  
**Affiliated to Acharya Nagarjuna University**  
**Accredited by NAAC with 'B' Grade**

<b>Department of Matheamtics</b>					
<b><u>Course Outcomes</u></b>					
<b>CBCS w.e.f 2020-21</b>					
S.NO.	Department	Course Code	Course Name	CO Number	Course Outcome
1	Mathematics	MAT1SK/1110-1K	DIFFERENTIAL EQUATIONS	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 differential equations of the first order but not of first degree
				4	Solve higher order linear differential equations, both homogeneous and non-homogeneous equations with constant coefficients

				5	Understand the concept and apply appropriate methods for solving differential equations
2	Mathematics	MAT2SK/1110-2 K	THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY	1	Get the knowledge of Planes
				2	Basic idea of lines, Sphere and Cone
				3	Understand the the properties of planes, lines, spheres and cones
				4	Express the problems geometrically and then to get the solution
3	Mathematics	MAT3SK/2110-3K	ABSTRACT ALGEBRA	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 behaviour 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

4	Mathematics	MAT4SKA/2110-4 1 K	REAL ANALYSIS	1	Get clear idea about the real numbers and real value 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 of a function.
				4	Know the geometrical interpretation of mean value theorems.
5	Mathematics	MAT4SKB/2110-4 2 K	LINEAR ALGEBRA	1	Understand the concepts of vector spaces, subspaces, bases, 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 methods
				4	Learn the properties of inner product spaces and determine orthogonality in inner product spaces

CBCS w.e.f 2015-16					
S.NO.	Department	Course Code	Course Name	CO Number	Course Outcome
1	Mathematics	MAT1S/1110-1	DIFFERENTIAL EQUATIONS	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 first degree
				4	Solve higher order linear differential equations, both homogeneous and non-homogeneous equations with constant coefficients
				5	Understand the concept and apply appropriate methods for solving differential equations
2	Mathematics	MAT2S/1110-2	SOLID GEOMETRY	1	Get the knowledge of Planes
				2	Basic idea of lines, Sphere and Cone
				3	Understand the properties of planes, lines, spheres and cones
				4	Express the problems geometrically and then to get the solution

3	Mathematics	MAT3S/2110-3	ABSTRACT ALGEBRA	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
4	Mathematics	MAT4S/2110-4	REAL ANALYSIS	1	Get clear idea about the real numbers and real value 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 of a function.
				4	Know the geometrical interpretation of mean value theorems.

5	Mathematics	MAT5SA/3110-5A	RING THEORY & VECTOR CALCULUS	1	Understand the concepts of Rings, Boolean Rings, Commutative and Non-commutative rings, Zero divisors, Integral domains, Division Rings, Fields and Characteristic of a Ring and their properties.
				2	Understand the concepts of subrings, Ideals, Principal ideals, Prime Ideals, Maximal ideals and their properties.
				3	Understand the concepts of Vector Differentiation, Differential Operators, Gradient, Divergent, Curl and their Properties.
				4	Understand the concepts of Vector Integration, Line, Surface and Volume Integrals.
				5	Understand the concepts of Gauss Divergence Theorem, Green's Theorem in a Plane, Stoke's Theorem and their Applications.
6	Mathematics	MAT5SB/3110-5B	LINEAR ALGEBRA	1	Understand the concepts of vector spaces, subspaces, basis, 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 methods
				4	Learn the properties of inner product spaces and determine orthogonality in inner product spaces
7	Mathematics	MAT6SB/3110- 6 B	NUMERICAL ANALYSIS	1	Understand the concepts of Numbers and their accuracy, Significant Digits, Rounding off Numbers and Errors and Types of Errors.
				2	Understand the concepts of Solutions of Algebraic and Transcendental Equations.
				3	Understand the concepts of Finite Differences and their properties and Missing Terms.
				4	Understand the concepts of Interpolation with equal intervals and Interpolation with unequal intervals.

8	Mathematics	MAT6SA1/3110-6A1	INTEGRAL TRANSFORMS	1	Understand the concepts of Application of Laplace Transforms to Solutions of Differential Equations with Constant Coefficients.
				2	Understand the concepts of Application of Laplace Transforms to Solutions of Differential Equations with Variable Coefficients.
				3	Understand the concepts of Application of Laplace Transforms to Solutions Differential Equations with Partial Differential Equations.
				4	Understand the concepts of Application of Laplace Transforms to Integral Equations.
					Learn the properties of Fourier Transforms, Fourier Sine and Cosine Transforms, Finite Fourier Transforms.
9	Mathematics	MAT6SA2/3110-6A2	ADVANCED NUMERICAL ANALYSIS	1	Understand the concepts of Least Square Curve Fitting Method, Fitting a Straight Line, Fitting an Exponential Function, Fitting a Power function and Fitting a Second Degree Parabola.

				2	Understand the concept of Numerical Differentiation.
				3	Understand the concept of Numerical Integration.
				4	Understand the concepts of Numerical Solution of Linear Systems of Simultaneous Equations
				5	Understand the concepts of Numerical Solution of Ordinary Differential Equations.