

LESSON PLAN

Discipline / Electrical	Semester-3rd	Name of the teaching faculty:- Akankshya Joshi
Subject:- Engg. Math-III	No. of days/per week- 04	Semester from date : 01.08.2023 to 30.11.2023 No. of weeks :- 15 (excluding puja vacation)
Week	Class day	Theory
1st	1st	Introduction to Complex Number
	2nd	Complex numbers, Conjugate complex numbers, Modulus and Amplitude of a Complex Numbers
	3rd	Geometrical Representation of Complex Number, Properties
	4th	Cube roots of unity and their Properties
2nd	1st	DE Moivre's Theorem
	2nd	Solved Problems, Doubt Clearing class
	3rd	Introduction to Rank of Matrix, Determine Rank of Matrix by Elementary Row Transformation
	4th	State Rouché's Theorem for Consistency of a system of linear equations in 'n' unknowns
3rd	1st	Solve equations in three unknowns testing Consistency
	2nd	Solved Problems, Doubt Clearing class
	3rd	Introduction to Differential Equation
	4th	Define Homogeneous and Non-Homogeneous Linear Differential Equations with constant coefficients
4th	1st	Find the general solution of homogeneous linear differential equation in terms of C.F.
	2nd	Find the general solution of Non homogeneous linear differential equation in terms of C.F and P.I.
	3rd	Derive rules of finding C.F and P.I in terms of operator D.
	4th	Define Partial Differential Equations(P.D.E)
5th	1st	Form partial differential equations by eliminating arbitrary constants and arbitrary functions
	2nd	Solve Partial differential equations of the form $P.p + Q.q = R$
	3rd	Solved Problems
	4th	Doubt Clearing Class

6th	1st	Define Gamma Function
	2nd	Define Laplace transform of a function
	3rd	Define Inverse Laplace Transform
	4th	Derive L.T of Standard functions
7th	1st	Explain existence conditions of LT
	2nd	Explain linear, shifting property of LT
	3rd	Question, answer on LT
	4th	Doubt Clearing Class
8th	1st	Formulate LT of Derivatives, Integrals, multiplication by t^n
	2nd	Formulate LT of Derivatives, Integrals, division by t .
	3rd	Derive formula of inverse L.T. and explain method of partial fractions.
	4th	Solved Problems
9th	1st	Define Periodic Functions
	2nd	Explain Euler's Formulae
	3rd	State Dirichlet's conditions
	4th	Dirichlet's conditions for the Fourier expansion of a function and its convergence.
10th	1st	Question answer discussion
	2nd	Express periodic function $f(x)$ satisfying Dirichlet's conditions as a Fourier series.
	3rd	Define Even and Odd Functions
	4th	Find Fourier series in a certain range.
11th	1st	Continuous functions and functions having points of discontinuity in a certain range.
	2nd	Solved Problems
	3rd	Doubt Clearing Class
	4th	Exercise solving Class
	1st	Appraise limitation of analytical methods of solution of Algebraic Equations

12th	2nd	Finding solutions of of Algebraic Equations by Bisection method.
	3rd	Finding solutions of of Algebraic Equations by Newton- Raphson method.
	4th	Solved Problems
13th	1st	Explain finite difference
	2nd	Explain forming forward and backward difference table.
	3rd	Define shift operator(E)
	4th	Establish relation between Shift Operator and difference operator.
14th	1st	Derive Newton's forward interpolation formula for equal interval.
	2nd	Derive Newton's backward interpolation formula for equal interval.
	3rd	State Lagrange's Interpolation formula for unequal intervals.
	4th	Explain numerical integration.
15th	1st	State Newton's Cote's Formula
	2nd	Trapezoidal Rule
	3rd	Simpson's 1/3rd Rule
	4th	Solved Problems