DHABALESWAR INSTITUTE OF POLYTECHNIC, ATHGARH

LESSON PLAN

Discipline- Diploma Engg   **Semester**- 3rd   **Name of Faculty**- Ashisha Panda

Subject- Engg. Math-III   **No. of day for week class allotted**- 04

Semester - From Dt. 05.09. 2022 To Dt. 22.12.2022 .   **No. of week**- 14

Week	Class Day	Theory Topics
1st	1st	Course Introduction
	2nd	Brief discussion on Number System (Natural,Integer,Rational,Irrational, Real Number)
2nd	1st	Brief discussion on Determinant
	2nd	Brief discussion on Matrix
	3rd	Brief discussion on Derivative
	4th	Brief discussion on Integration
3rd	1st	Imaginary number with Problem
	2nd	Defination of Complex Number with addition ,Subtraction, Multiplication and Division of Complex Numbers
	3rd	Multiplicative Inverse, Conjugate , Modulus & amplitude of complex number
	4th	Geometrical Representation of complex number
4th	Dasahara	
5th	1st	Properties of Complex number
	2nd	Square root of Complex number
	3rd	Cube root of unity & properties
	4th	Revision of complex no. and problem solving.
6th	1st	Basic of matrices and defining rank of matrix
	2nd	Rank of matrix by determinant method
	3rd	Elementary row transformation properties
	4th	Rank of Matrix by Matrix Method
7th	1st	Rouches Theorem and Solving equations of three variables
	2nd	Revision and problem solving
	3rd	Equation and type of Equation
	4th	Limitation of solutionof algebraic equation
8th	1st	Intermediate value theorem
	2nd	Solution by Bisection Method
	3rd	Solution by Newtons Method
	4th	Explain finite difference and formation of table
9th	1st	Forward difference(▲) and Backward difference(▼)
	2nd	Define Shift operator & establish the relation betweenE,▲,▼
	3rd	Derive Newton's forward difference interpolation formula for equal interval with problems
	4th	Derive Newton's backward difference interpolation formula for equal interval with problems

10th	1st	Lagrange's interpolation and inverse interpolation formula for unequal interval with problem
	2nd	State and explain Numerical integration and Newton-cotes quadrature formula
	3rd	State Trapezoidal rule and problem
	4th	State Simpson's $1/3^{rd}$ rule and problem
11th	1st	Define Differential equation , Order and degree of the differential equation.
	2nd	Define Homogeneous and nonhomogeneous linear diff. equation with constant coefficient Rules for finding complementary function (C.F)
	3rd	Rules for finding Perticular Integral (P.I.)
	4th	Define Partial differential equation and Formation of PDE.
12th	1st	Solve Partial Differential Equation in the form $Pp+Qq=R$
	2nd	Define Gamma Function, $\Gamma(n+1)= n!$, $\Gamma(1/2)=\sqrt{\pi}$
	3rd	Define Laplace transformation and formula for $L\{f(t)$ with example
	4th	Laplace Transformation by shifting, multiplication by t^n and division by t
13th	1st	Derive inverse LT formulae and solution of inverse LT by partial fraction.
	2nd	Revision and problem solving LT and ILT.
	3rd	Define periodic function and state dirichlet condition and convergence.
	4th	State Euler's theorem for Fourier series and problem on solution for continuous function in interval($0\le x\le 2\pi$ or$-\pi\le x\le \pi$)
14th	1st	Problem
	2nd	Problem for discontinuous function
	3rd	Problem continued and defining odd and even function with example
	4th	Problem based on odd and even function
15th	1st	Half range sine and cosine series
	2nd	Revision and problem solving on Fourier series
	3rd	Probable question discussion
	4th	Probable question discussion