## DHABALESWAR INSTITUTE OF POLYTECHNIC, ATHGARH

## **LESSON PLAN**

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

10th 2nd 2nd State and explain Numerical integration and Newton-cotes quadrature formula 3rd State Trapezoidal rule and problem 4th State Brapezoidal rule and problem  1st Define Differential equation , Order and degree of the differential equation in the form Pp+Qp=R partial Differential equation and Formation of PDE.  1st Solve Partial Differential Equation in the form Pp+Qq=R partial partial fraction and formula for L(ff(t) with example  4th Laplace Transformation by shifting,multiplication by the and division by the partial fraction.  2nd Revision and problem solving LT and ILT. 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≤x≤2π or-π≤≤π)  1st Problem 2nd Problem for discontinuous function  1st Half range sine and cosine series Avib Probable question discussion  4th Probable question discussion	<u> </u>		<u> </u>
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Quadrature formula   State Trapezoidal rule and problem   4th   State Simpson's 1/3rd rule and problem	_		
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