PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH

LESSON PLAN

Session-2021-2022

Discipline: Electrical Engg. Engg. Semester: 3rd

Name of the Teaching Faculty: Mr Shubhranshu ku sahu

Subject: Engg. Math - III No. of Days/per week class allotted 4

Semester From Date : 1.10.21 To Date : 31.1.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
1st	1	Complex Number (Define Real and Imaginary numbers), Integral power of i
	2	Algebraic Operations with complex numbers (Addition, subtraction, Multiplication and Division)
	3	Conjugate, Modulus and Amplitudes of a complex number
	4	Geometrical Representation of complex number and square roots of a complex number
2nd	1	Cube roots of unity and their properties
	2	De Moivre's Theorem and solve Problems
	3	Basic concepts and Rank of Matrix
	4	Elementary row transformation to determine Rank of matrix
3rd	1	State Rouche's Theorem for Consistency of a system of linear equations in n unknowns
	2	Linear equations in three unknowns testing Consistency
	3	Linear Differential Equation, Homogeneous and Non-homogeneous diff. eq^{n}'s with constant coefficients
	4	General solution of linear diff. eq^{n}'s in terms of C.F. and P.I.

Signature of the Faculty

Dt. 9.2.21

Subject: Engg. Math - III No. of Days/per week class allotted 4

Semester From Date : 1.10.21 To Date : 31.1.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
4th	1	Rules of finding C.F. and P.I. in terms of Operator D
	2	Solve Problems
	3	Solve Problems
	4	Solve Problems
5th	1	Partial diff. eq^ns by eliminating arbitrary constants and eliminating arbitrary functions
	2	Partial diff. eq^ns of the form $Pp + Qq = R$
	3	Solve Problems
	4	Solve Problems
6th	1	Gamma function, $\Gamma(n+1)$ and find $\Gamma(\frac{1}{2})$
	2	Laplace Transformation of a function $f(t)$ and transforms of elementary functions
	3	Linearity, shifting and change of scale property of Laplace Transform
	4	Laplace transforms of derivatives

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Dt. 25.1.21

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Week	Class Day	Theory /Practical Topics
7 Th	1	Solve Problems
	2	Laplace Transforms of Integrals
	3	Multiplication by t^n
	4	Division by t
8 Th	1	Evalution of Integrals by Laplace Transforms
	2	Solve Problems
	3	Formulae of inverse Laplace transforms (Method of partial fractions)
	4	Solve Problems
9 Th	1	Appraise limitation of analytical methods of solution of Algebraic Equations
	2	Derive Iteration formulae for finding the solution of Algebraic Equations by
	3	a) Bisection Method and Solve Problems
	4	b) Newton - Raphson Method and Solve Problems

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9.21

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Semester From Date : 1.10.21 To Date : 31.10.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
10 th	1	Finite difference and forward table of forward with problems and
	2	backward difference with problems
	3	Factorial Notation and solve problems
	4	Define shift operator (E) and establish relation between E and difference operator (Δ)
11 th	1	Derive Newton's forward and backward interpolation formula for equal intervals
	2	Solve Problems
	3	Solve Problems
	4	Solve Problems
12 th	1	Inverse interpolation (Lagrange's interpolation formulae for unequal intervals)
	2	Solve Problems
	3	Numerical Integration a) Newton's Cote's formulae
	4	b) Trapezoidal Rule and c) Simpson's $\frac{1}{3}$ Rule and Solve Problems

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Dt: 29

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Semester From Date : 1.10.21 To Date : 31.1.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
13 th	1	Define periodic functions
	2	Eulen's formulae (state and Solve Problems)
	3	Solve Problems
	4	Solve Problems
14 th	1	Dirichlet's conditions for a Fourier expansion
	2	Obtain Fourier series of continuous functions and functions having points of discontinuity and solve problems
	3	Solve Problems
	4	Change of Intervals and Solve Problems
15 th	1	Solve Problems
	2	Define odd and even functions with examples
	3	Solve Problems
	4	Solve Problems

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