

Badriprasad Institute of Technology, Sambalpur

Lesson plan for Theory -1, Engineering Math-III

Semester & Branch : 3rd Sem , Electrical Engineering

Total Periods-60

Name of the faculty : Bhabani Meher

No of periods /week-4

WEEK	CLASS DAY	THEORY
1ST	1ST	INTRODUCTION
	2ND	Introduction to Real and complex number
	3RD	conjugate complex numbers, Modulus of complex no. and property
	4TH	Amplitude of a complex number
2ND	1ST	Problem on amplitude
	2ND	Geometrical Representation of Complex Numbers.
	3RD	Properties of Complex Numbers.
	4TH	Determination of three cube roots of unity and their properties.
3RD	1ST	De Moivre's theorem
	2ND	Solve problems on books
	3RD	Introduction to matrix
	4TH	Define rank of a matrix.
4TH	1ST	Perform elementary row transformations to determine the rank of a matrix.
	2ND	Rouche's theorem for consistency of a system of linear equations in unknowns
	3RD	Problem using Rouche theorem
	4TH	Solve equations in three unknowns testing consistency.
5TH	1ST	Solve problems on 2.1 – 2.4 on books
	2ND	Define Homogeneous Linear Differential Equations with constant coefficient with example
	3RD	Non – Homogeneous Linear Differential Equations with contact
	4TH	Find general solution of linear Differential Equations in terms of C.F. and P.I.
6TH	1ST	Derive rules for finding C.F. And P.I. in terms of operator D
	2ND	Define partial differential equation (P.D.E) .
	3RD	Partial differential equations by eliminating arbitrary constants and arbitrary function
	4TH	Partial differential equations of the form $Pp + Qq = R$
7TH	1ST	Exercise problems on 3.1- 3.6
	2ND	Introduction to Laplace transform
	3RD	Define Gamma function and $\Gamma(n+1)=n!$ and find .
	4TH	Laplace Transform of a function
8TH	1ST	Inverse Laplace Transform .
	2ND	Derive L.T. of standard functions
	3RD	Existence conditions of L.T.
	4TH	L.T. of derivatives, integrals, multiplication by t^n and division by t .
9TH	1ST	Formulae of inverse L.T. and explain method of partial fractions .
	2ND	Solveing problem on 4.1- 4.6
	3RD	Introduction to periodic function
	4TH	Dirichlet's condition for the Fourier expansion of a function and it's convergence
10TH	1ST	Express periodic function satisfying Dirichlet's conditions as a Fourier series
	2ND	Euler's formulae
	3RD	Even and Odd functions and find Fourier Series in $(0 < x < \pi)$ and $(-\pi < x < \pi)$
	4TH	F.S of continuous functions and functions having points of discontinuity
11TH	1ST	Solveing problems on 5.1 – 5.6
	2ND	Introduction to Numerical method
	3RD	Appraise limitation of analytical methods of solution of Algebraic Equations.
	4TH	Derive Iterative formula for finding the solutions of Algebraic Equations by :

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12TH	1ST	Bisection method
	2ND	Newton- Raphson method
	3RD	solve problems on 6.2
	4TH	Introduction to finite difference
13TH	1ST	Explain finite difference
	2ND	forming table of forward and backward difference
	3RD	Define shift Operator (E)
	4TH	Relation between Δ & difference operator(Δ)
14TH	1ST	Newton's forward and backward interpolation formula for equal intervals
	2ND	Lagrange's interpretation formula for unequal intervals.
	3RD	Introduction to numerical integration
	4TH	Newton's Cote's formula.
15TH	1ST	Trapezoidal rule.
	2ND	Simpson's 1/3rd rule
	3RD	Solve problems on 7.1- 7.5
	4TH	SEMESTER PATTERN EXAM.

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