NILASAILA INSTITUTE OF SCIENCE & TECHNOLOGY
SERGARH-756060, BALASORE (ODISHA)
(Approved by AICTE& affiliated to SCTE&VT, Odisha)

LESSON PLAN

SUBJECT: Th1. ENGINEERING MATHEMATICS – III

CHAPTER WISE DISTRIBUTION OF PERIODS

Sl.No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed
1	Complex Numbers	6	6
2	Matrices	4	4
3	Differential Equations	10	10
4	Laplace transforms	12	12
5	Fourier Series	12	12
6	Numerical Methods	4	4
7	Finite difference & interpolation	12	12
	TOTAL	60	60

Discipline: EE/EEE	Semester: 3RD	Name of the Teaching Faculty: Mr SUBAS CHANDRA DASH
Week	**Class Day**	**Theory / Practical Topics**
1ST	**1st**	**1.Complex Numbers** 1.1 Real and Imaginary numbers
	2nd	1.2 Complex numbers, conjugate complex numbers, Modulus and Amplitude of a complex number
	3rd	1.3 Geometrical Representation of Complex Numbers. 1.4 Properties of Complex Numbers
	4th	1.5 Determination of three cube roots of unity and their properties.
2ND	**1st**	1.6 De Moivre's theorem
	2nd	1.7 Solve problems on 1·1 - 1·6
	3rd	**2.Matrices** 2.1. Define rank of a matrix. 2.2. Perform elementary row transformations to determine the rank of a
	4th	2.3. State Rouche's theorem for consistency of a system of linear equations in unknowns.
3RD	**1st**	2.4. Solve equations in three unknowns testing consistency
	2nd	2.5. Solve problems on 2.1 – 2.4
	3rd	**3.Linear Differential Equations** 3.1. Define Homogeneous and Non – Homogeneous Linear Differential Equations with constant coefficients with examples
	4th	3.2. Find general solution of linear Differential Equations in terms of C.F. and P.I.
4TH	**1st**	3.2. Find general solution of linear Differential Equations in terms of C.F. and P.I.
	2nd	3.3. Derive rules for finding C.F. And P.I. in terms of operator D, excluding.
	3rd	3.3. Derive rules for finding C.F. And P.I. in terms of operator D, excluding.
	4th	3.4. Define partial differential equation (P.D.E)
5TH	**1st**	3.5. Form partial differential equations by eliminating arbitrary constants and arbitrary functions
	2nd	3.5. Form partial differential equations by eliminating arbitrary constants and arbitrary functions
	3rd	3.6. Solve partial differential equations of the form Pp + Qq = R
	4th	3.7. Solve problems on 3.1- 3.6
6TH	**1st**	**4.Laplace Transforms** 4.1. Define Gamma function and and find .
	2nd	4.2. Define Laplace Transform of a function and Inverse Laplace Transform .
	3rd	4.2. Define Laplace Transform of a function and Inverse Laplace Transform .
	4th	4.2. Define Laplace Transform of a function and Inverse Laplace Transform .
	1st	4.3. Derive L.T. of standard functions and explain existence conditions of L.T.

7TH	**2nd**	4.3. Derive L.T. of standard functions and explain existence conditions of L.T.
	3rd	4.4. Explain linear, shifting property of L.T.
	4th	4.5. Formulate L.T. of derivatives, integrals, multiplication by and division by .
8TH	**1st**	4.5. Formulate L.T. of derivatives, integrals, multiplication by and division by .
	2nd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions .
	3rd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions .
	4th	4.7. solve problem on 4.1- 4.6
9TH	**1st**	**5.Fourier Series** 5.1. Define periodic functions
	2nd	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence
	3rd	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence
	4th	5.2. State Dirichlet's condition for the Fourier expansion of a function and it's convergence
10TH	**1st**	5.3. Express periodic function F(X) satisfying Dirichlet's conditions as a Fourier series.
	2nd	5.3. Express periodic function F(X) satisfying Dirichlet's conditions as a Fourier series.
	3rd	5.4. State Euler's formulae
	4th	5.5. Define Even and Odd functions and find Fourier Series in
11TH	**1st**	5.5. Define Even and Odd functions and find Fourier Series in
	2nd	5.6. Obtain F.S of continuous functions and functions having points of discontinuity
	3rd	5.6. Obtain F.S of continuous functions and functions having points of discontinuity
	4th	5.7. Solve problems on 5.1 – 5.6
12TH	**1st**	**6.Numerical Methods** 6.1. Appraise limitation of analytical methods of solution of Algebraic Equations.
	2nd	6.2. Derive Iterative formula for finding the solutions of Algebraic Equations by : 6.2.1. Bisection method 6.2.2. Newton- Raphson method
	3rd	6.2. Derive Iterative formula for finding the solutions of Algebraic Equations by : 6.2.1. Bisection method 6.2.2. Newton- Raphson method
	4th	6.3. solve problems on 6.2
13TH	**1st**	**7.Finite difference and interpolation** 7.1. Explain finite difference and form table of forward and backward difference
	2nd	7.2. Define shift Operator and establish relation between & difference operator.

	3rd	7.3. Derive Newton's forward and backward interpolation formula for equal intervals
	4th	7.4. State Lagrange's interpretation formula for unequal intervals.
14TH	**1st**	7.5. Explain numerical integration and state: 7.5.1. Newton's Cote's formula
	2nd	7.5.1. Newton's Cote's formula
	3rd	7.5.2. Trapezoidal rule
	4th	7.5.2. Trapezoidal rule
15TH	**1st**	7.5.2. Trapezoidal rule
	2nd	7.5.3. Simpson's 1/3rd rule
	3rd	7.5.3. Simpson's 1/3rd rule
	4th	7.6. Solve problems on 7.1- 7.5

Sign.Of Faculty **Sign. Of HOD**