



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



LESSON PLAN

SUBJECT: Th1. ENGINEERING MATHEMATICS – III

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

7TH	2 nd	4.3. Derive L.T. of standard functions and explain existence conditions of L.T.
	3 rd	4.4. Explain linear, shifting property of L.T.
	4 th	4.5. Formulate L.T. of derivatives, integrals, multiplication by and division by.
8TH	1 st	4.5. Formulate L.T. of derivatives, integrals, multiplication by and division by.
	2 nd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions.
	3 rd	4.6. Derive formulae of inverse L.T. and explain method of partial fractions.
	4 th	4.7. solve problem on 4.1- 4.6
9TH	1 st	5. Fourier Series Define periodic functions
	2 nd	5.2. State Dirichlet's condition for the Fourier expansion of a function and its convergence
	3 rd	5.2. State Dirichlet's condition for the Fourier expansion of a function and its convergence
	4 th	5.2. State Dirichlet's condition for the Fourier expansion of a function and its convergence
10TH	1 st	5.3. Express periodic function $F(x)$ satisfying Dirichlet's conditions as a Fourier series.
	2 nd	5.3. Express periodic function $F(x)$ satisfying Dirichlet's conditions as a Fourier series.
	3 rd	5.4. State Euler's formulae
	4 th	5.5. Define Even and Odd functions and find Fourier Series in
11TH	1 st	5.5. Define Even and Odd functions and find Fourier Series in
	2 nd	5.6. Obtain $F.S.$ of continuous functions and functions having points of discontinuity
	3 rd	5.6. Obtain $F.S.$ of continuous functions and functions having points of discontinuity
	4 th	5.7. Solve problem on 5.1 –5.6
12TH	1 st	6. Numerical Methods Appraise limitation of analytical methods of solution of Algebraic Equations.
	2 nd	Derive iterative formula for finding the solutions of Algebraic Equations by : Bisection method Newton-Raphson method
	3 rd	Derive iterative formula for finding the solutions of Algebraic Equations by : Bisection method Newton-Raphson method
	4 th	6.3. solve problem on 6.2
13TH	1 st	7. Finite difference and interpolation Explain finite difference and form table of forward and backward difference
	2 nd	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 interpolation formula for unequal intervals.
14TH	1st	Explain numerical integration and state: Newton's Cote's formula
	2nd	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 1/3 rule
	3rd	7.5.3. Simpson's 1/3 rule
	4th	7.6. Solve problems on 7.1- 7.5

Sign. Of Faculty

Sign. Of HOD