Engineering Mathematics – III (Th.01)

LIST OF MONTH WISE AVAILABLEDAYS /PERIODS

Month	Sept.	Oct	Nov	Dec	Jan	TOTAL
Month Wise No. of Academic Days Available	01	12	22	24	06	65
Month Wise No. of Academic Periods Available						

SUBJECT WISE DISTRIBUTION OF PERIODS

SL.NO	Chapter No. & Name of the Chapter as per the syllabus	No.of periods as Per the syllabus	No. of periods Actually needed	Expected marks Covered chapter wise
1	COMPLEX NUMBER	06	07	09
2	MATRICES	04	06	09
3	LINEAR DIFFERNTIAL EQUATION	10	11	15
4	LAPLACE TRANSFORM (L.T.)	12	13	16
5	FOURIER SERIES (F.S.)	12	12	15
6	NUMERICAL METHODS	04	05	16
7	FINITE DIFFERNCE & INTERPOLATION	12	13	15
Total:		**60**	**67**	**95**

Signature of Lecturer **Signature of HOD I/C** **Signature of Academic I/C** Signature of Vice Principal

Engineering Mathematics – III (Th.01)

ARTICLE WISE DISTRIBUTION OF PERIODS

CHAPTER-01: Complex Number

Article No.	Name of the Article	Required Periods	Lect. Sign. with date	Authenticity duly verified by H.O.D	Sign by V.P
1.1	Real & Imaginary Numbers	01			
1.2	ComplexNumber,Conjugate,modulus & Amplitude of Complex Number	01			
1.3	Geometrical Representation of complex number	01			
1.4	Properties of Complex number	01			
1.5	Determination of Cube root of unity and their properties.	01			
1.6	De-Moivre's theorem	01			
	Problems	01			
Total		07			
	Short Question with answer and Long question with hints				

CHAPTER-02: MATRICES

Article No.	Article	Required Periods	Lect.Sign with Date	Authenticity duly verified byH.O.D..	Sign by V.P.
2.1	Define rank of a matrix.	01			
2.2	Perform elementary row transformation to determine rank of a matrix.	01			
2.3	Define Rouche's Theorem for consistency of a system of linearequations in n unknowns.	01			
	Problem.	01			
2.4	Solve equations in three unknowns testing consistency.	01			
2.5	Solve problems on 2.1 -2.4	01			
	TOTAL	06			
	Short questions with answer and long question with hints				

CHAPTER -03. LINEAR DIFFERNTIAL EQUATIONS.

Article No.	Article	Required Periods	Lect.Sign with Date	Authenticity duly verified byH.O.D..	Sign by V.P.
3.1	**Define homogeneous & non homogeneous diff. Equations with constant coefficient with examples.**	**01**			
3.2	**Find general solution of linear equations in terms of C.F & P.I**	**01**			
	problem.	**01**			
3.3	**Derive rules of finding C.F & P.I in terms of operator D.**	**01**			
	problem.	**01**			
	Problem.	**01**			
3.4	Define Partial Differential equations(P.D.E.)	**01**			
	Problem.	**01**			
3.5	Form partial differential equations by eliminating arbitrary constants and arbitrary functions.	**01**			
3.6	Solve partial differential equations of the form P.p+Q.q=R.	**01**			
3.7	Solve Engg. Problems on 2.1-2.6.	**01**			
	Total	**11**			
	Short questions with answer and long question with hints				

CHAPTER-04 .L APLACE TRANSFORMS.

Article No.	Article	Required Periods	Lect.Sign with Date	Authenticity duly verified byH.O.D.	Sign by V.P.
4.1	Define Gamma function and and find gamaof(n+1)=n! And gama of (1/2).	**01**			
4.2	Define Laplace transform of a function f(t) and inverse Laplace transform .	**01**			
	Problem.	**01**			
4.3	Derive L.T. of standard functions and explain existence conditions of L.T.	**01**			
	Problem.	**01**			
4.4	Explain linear, shifting of L.T.	**01**			
	Problem.	**01**			
4.5	Formulate L.T of derivatives.				
	Integrals,multiplication by $t^{n.}$	**01**			
	division by t.	**01**			
	Problem.	**01**			
4.6	Derive formula of inverse L.T.	**01**			
	Problem.	**01**			
4.7	Solving Problems on 4.1-4.6	**01**			
	Total	**13**			
	Short questions with answer and long question with hints				

Chapter-05. : FOURIER SERIES (F.S.)

Article No.	Article	Required Periods	Lect.Sign with Date	Authenticity duly verified byH.O.D..	Sign by V.P.
5.1	Define periodic functions.	**01**			
5.2	State Dirichlet's conditions for the Fourier expansion of a function and its convergence.	**01**			
	Problem	**01**			

5.3	Express periodic function f(x)satisfying Dirichlet's conditions as a Fourieseries.	**01**			
	Problem.	**01**			
5.4	State Euler's formulae.	**01**			
	Problem.	**01**			
5.5	Define Even and Odd functions and Obtain F.S. in($0<x<2\pi$ and $-\pi\leq x<\pi$)	**01**			
	Problem.	**01**			
5.6	Obtain F.S. of continuous functions and functions having points of discontinuity in ($0<x<2\pi$ and $-\pi<x<\pi$).	**01**			
5.7	Problem.	**01**			
	Solving Problembs on 5.1-5.6	**01**			
	TOTAL	**12**			
	Short questions with answer and long question with hints				

Chapter-5: NUMERICAL METHODS

Article No.	**Article**	**Required Periods**	**Lect.Sign with Date**	**Authenticity duly verified by H.O.D..**	**Sign by V.P.**
6.1	Appraise limitations of analytic method of solution of algebraic and transcendental equations.	**01**			
6.2	Derive Iterative formula for finding the solutions of algebraic and transcendental equations by: a) Bisection method	**01**			
	b) Newton Raphson method	**01**			
	Problem	**01**			
6.3	Solving Problems on 6.2	**01**			
	TOTAL	**05**			

CHAPTER-06.FINITE DIFFERENCE and INTERPOLATION

Article No.	Article	Required Periods	Lect.Sign with Date	Authenticity duly verified by H.O.D..	Sign by V.P.
7.1	Explain finite difference and form table of forward and backward difference.	**01**			
7.2	Define shift operator(E) and establish relation between E and difference operator (Δ).	**01**			
	Problem.	**01**			
7.3	Derive Newton's forward and backward interpolation formula for equal interval.	**01**			
	Problem.	**01**			
7.4	State Lagrange's Interpolation formula for unequal intervals.	**01**			
	Problem.	**01**			
7.5.1	Explain numerical integration and state Newton-Cote's formula .	**01**			
	Problem.	**01**			
7.5.2	Trapezoidal Rule.	**01**			
7.5.3	Simpson's 1/3rd rule	**01**			
	Problem.	**01**			
7.6	Solving Problems on 7.1-7.5	**01**			
	Total	**13**			

Learning Resources:

Sl No	Title of Book	Author	Publisher
1	Higher Engg Math.	Dr. B.S.Grewal	Khana
2	Elements of Math, Vol-1	Odisha state bureau of text book preparation& production.	
3	Text Book of Engineering Math.-III	C.R.Mallick	Khana
4	Text Book of Engineering Math.-I	C.R.Mallick	Khana