Lesson Plan for Engineering Mathematics-III(TH-1)

Discipline	Semester:-3rd sem (ELECTRICAL & E&TC)	Name of the Teaching Faculty:- **Jajatendu Keshari Chand**
Subject:- Mathematics	No of days/per week class allotted	Semester from 01/07/2024 to 08/11/2024 No of weeks:- 15
Week	Class Day	Theory Topics
1st	1st	INTRODUCTION OF IMAGINARY NUMBER i AND COMPLEX NUMBERS . CONJUGATE , MODULUS OF A COMPLEX NUMBER.
	2nd	GEOMETRICAL REPRESENTATION OF COMPLEX NUMBER . DETERMINATION OF AMPLITUDE OF COMPLEX NUMBER.
	3rd	PROPERTIES OF COMPLEX NUMBER AND PROBLEM ON IT. CONVERSION OF COMPLEX NUMBER TO ITS POLAR FORM. DETERMINATION OF RECIPROCAL OF A COMPLEX NUMBER.
	4th	SQUARE ROOT OF A COMPLEX NUMBER.
2nd	1st	SQUARE ROOT OF A COMPLEX NUMBER.CUBE ROOTS OF UNITY AND PROBLEM ON IT.
	2nd	STATE DEMOVIRE'S THEOREM AND PROBLEMS ON IT.
	3rd	PROBLEMS ON DEMOVIRE'S THEOREM.
	4th	MATRICES AND TYPES OF MATRICES. SUBMATRIX AND RANK OF A MATRIX
3rd	1st	DETERMINATION OF RANK OF MATRIX USING DEFINITION.ELEMENTARY ROW/COLUMN OPERATIONS.ROW REDUCED ECHELON FORM.
	2nd	DETERMINATION OF RANK OF A MATRIX BY REDUCING IT TO ITS ECHELON FORM
	3rd	STATE ROUCHE'S THEOREM FOR CONSISTENCY OF A SYSTEM . TESTING CONSISTENCY AND SOLVE SYSTEM OF LINEAR EQUATION.
	4th	SOLVING PROBLEM OF LINEAR SYSTEM OF EQUATION IN 3 VARIABLES.

4th	1st	SOLVING LINEAR SYSTEM OF EQUATION
	2nd	DEFINATION OF HOMOGENOUS AND NON HOMOGENOUS DIFF EQUATION WITH CONSTANT COEFFICIENT WITH EXAMPLES.
	3rd	DETERMINATION OF C.F. OF DIFF EQUATION. DETERMINATION OF P.I. INTERMS OF OPERATOR D, FOR DIFFERENT FUNCTION.
	4th	DETEMINATION OF PI FOR DIFFERENT FUNCTIONS
5th	1st	SOLUTION OF DIFFERENTIAL EQUATION.
	2nd	SOLVING PROBLEMS OF DIFFERENTIAL EQUATION
	3rd	DEFINE PARTIAL DIFFERENTIAL EQUATION . FORMATION OF PDE BY ELIMINATING ARBITRARY CONSTANTS AND FUNCTIONS.
	4th	SOLVING PDE IN THE FORM Pp+Qq=R
6th	1st	SOLVING PDE BY LAGRANGE'S MULTIPLIER METHOD
	2nd	SOLUTION OF PDE.
	3rd	REVISION OF COMPLEX NUMBER, MATRIX, ODE AND PDE. DOUBT CLEARING
	4th	DEFINE GAMMA FUNCTION. EVALUTION OF GAMMA FUNCTION AT 1/2 AND NATURAL NUMBERS. CALCUTION OF GAMMA FUNCTION AT DIFFERENT POINTS USING RECURRENCE RELATION
7th	1st	LAPLACE TRANSFORMATION . EXISTENCY OF LT. FORMULAS FOR LT OF SOME STANDARD FUNCTIONS
	2nd	1ST SHIFTING THEOREM AND PROBLEM ON IT. FORMULAS ON MULTIPLICATION BY t^n and division by t. FORMULAS ON DERIVATIVE AND INTEGRATION OF FUNCTION.
	3rd	FINDING LT OF FUNCTIONS USING FORMULAS.
	4th	FINDING LT OF FUNCTIONS USING FORMULAS.
8th	1st	DEFINE INVERSE LT OF STANDARD FUNCTIONS AND FINDING INVERSE LT OF SOME FUNCTIONS
	2nd	INTRODUCTION TO PARTIAL FRACTION METHOD FOR FINDING INVERSE LT
	3rd	FINDING INVERSE LT BY PF METHOD
	4th	STATE REVERSE OF 1ST SHIFTING AND OTHER FORMULAS ON LT. SOLVING PROBLEM ON IT
9th	1st	SOLVING PROBLEM ON INVERSE LT.
	2nd	SOLVING PROBLEM ON INVERSE LT USING FORMULAS.

	3rd	PRACTICING PROBLEMS ON LT AND DOUBT CLEARING.
	4th	CLASS TEST ON MATRICES, COMPLEX NUMBER , DIFF EQUATION AND LT.
10th	1st	PERIODIC FUNCTION. EXPLANATION OF GENERILISED BY PARTS RULE AND SOM E TRIGNOMETRIC FORMULAS. DEFINE FOURIER SERIES AND EULER'S FORMULA FOR FINDING FOURIER COEFFICIENTS.
	2nd	DETERMINE FOURIER SERIES OF FUNCTIONS. DETERMINATION OF FOURIER SERIES OF ODD AND EVEN FUNCTIONS.
	3rd	DISCUSSION OF PROBLEMS OF FOURIER SERIES
	4th	DISCUSSION OF PROBLEMS OF FOURIER SERIES. STATE DIRCHLET'S CONDITION FOR FINDING CONVERGENCY OF A FOURIER SERIES .FIND FOURIER SERIES OF FUNCTIONS HAVING SOME POINTS OF DISCONTINUITY.
11th	1st	DISCUSSION OF PROBLEMS OF FOURIER SERIES OF FUNCTIONS HAVING DISCONTINUITIES.
	2nd	DISCUSSION OF PROBLEMS OF FOURIER SERIES OF FUNCTIONS HAVING DISCONTINUITIES
	3rd	REVISION OF FOURIER SERIES CHAPTER WITH PRACTING MORE PROBLEMS.
	4th	DISCUSSION OF LIMITATION OF AN ANALYTICAL METHOD OF SOLUTION OF ALGEBARIC EQUATION AND INTRODCTION OF NUMERICAL METHODS. EXPLANATION OF BISECTION METHOD.
12th	1st	PROBLEMS ON BISECTION METHOD.
	2nd	EXAPLANATION OF NEWTON RAPHSON METHOD AND DISCUSSION OF PROBLEM.
	3rd	DISCUSSION OF PROBLEMS ON NEWTON RAPHSON METHOD.
	4th	EXPLANATION OF FINITE DIFFERENCES AND FORM TABLE OF FORWARD AND BACKWARD DIFFERENCE. DEFINE SHIFT OPERATOR AND STATE RELATIONSHIPS BETWEEN DIFFERENT OPERATOR.
13th	1st	DEFINCE INTERPOLATION AND FIND MISSING VALUES FORM TABLE.
	2nd	STATE NEWTON'S FORWARD AND BACKWARD INTERPOLATION FORMULA FOR EQUISPACED INTERVALS AND SOLVE PROBLEM ON THEM
	3rd	SOLVE PROBLEMS OF FORWARD AND BACKWARD INTERPOLATION.
	4th	STATE LAGRANGE'S INTERPOLATION FORMULA FOR UN EQUAL INTERVALS AND PRACTICE PROBLEM ON IT.

15th	1st	PRACTICING PROBLEMS ON INTERPOLATION AND DOUBT CLEARING.
	2nd	EXPLAIN NUMERICAL INTEGRATION.STATE NEWTON COTE'S FORMULA. STATE TRAPEZOIDAL RULE AND COMPOSITE TRAPEZOIDAL RULE.
	3rd	FIND INTERGRATIONS USING COMPOSITE TRAPEZOIDAL RULE. STATE SIMPSON'S 1/3 RULE AND COMPOSITE 1/3 RULE AND SOLVE PROBLEM ON IT.
	4th	SOLVE PROBLEMS OF NUMERICAL INTERGRATION AND DOUBT CLEARING

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