Lesson Plan

Name of Faculty : Gaurav Singh Sisodia
Discipline : Mathematics
Semester : CE+CSE+ECE+EE+ME-3rd sem
Subject : Mathematics –III (BSC-201-T)
Lesson Plan Duration: 15 weeks (from September, 2022 to January, 2023)
Work Load (Lecture/Practical) per week (in hours): **Lectures 03 hours**.

Week	Theory		
	Lecture Day	**Topic (Including Assignment/Test)**	**Actual Lesson Plan covered**
1st	1	Euler's Formulae	
	2	Dirichlet's Condition for Fourier expansions	
	3	Problems and Solutions	
2nd	4	Fourier expansion of functions having point of discontinuity	
	5	Change of interval	
	6	Problems and Solutions	
3rd	7	Odd and even functions	
	8	Problems and Solutions	
	9	Fourier expansion of square wave	
4th	10	Rectangular wave, saw-toothed wave	
	11	Half and full rectified wave	
	12	Half range sine and cosine series	
5th	13	Problems and Solutions	
	14	Fourier integrals Theorem	
	15	Problems and Solutions	
6th	16	Fourier transforms	
	17	Fourier sine & cosine transforms	
	18	Problems and Solutions	
7th		----------**Ist Minor Test**----------	
8th	19	Properties of Fourier transforms,	
	20	Convolution theorem	
	21	Shifting theorem (both on time and frequency axes)	
9th	22	Fourier transforms of derivatives	
	23	Fourier transforms of integrals	
	24	Fourier transform of Dirac delta function	
10th	25	Problems and Solutions	
	26	Functions of complex variable, limit & continuity of a function	
	27	Exponential , Trigonometric, Hyperbolic &Logarithmic functions	
11th	28	Differentiability & Analyticity	
	29	C-R equations: necessary & sufficient condition for function to be analytic	
	30	Polar form of C-R equations, Harmonic functions	
12th	31	Integration of complex functions	
	32	Problems and Solutions	
	33	Cauchy Theorem, Cauchy- Integral formula.	
13th	34	Power series, radius and circle of convergence	
	35	Taylor's Maclaurin's and Laurent's series	
	36	Zeroes and singularities of complex functions	
14th		----------**2nd Minor Test**----------	
15th	37	Residues. Evaluation of real integrals using residues (around unit circle)	
	38	Residues. Evaluation of real integrals using residues (around semi circle)	
	39	Problems and Solutions	