Sardar Vallabhbhai Patel Institute Of Technology- SVIT- VASAD

LESSON PLAN

Name: **Mr. Rakesh R. Darji** | **Subject:** **A.E.M** | Hrs/Week: 3

Designation: **Asst. Prof.** | **Subject code:** **2130002** | Total weeks: 14

Department: **A.S.&H.** | Class: **IT (16)** | Total Hrs: 42

Hrs	Details of Topics to be Covered in one lecture from GTU syllabus	Proposed Date	Actual Date
	Syllabus Lesson No .1: First Order Differential Equation		
1	Discussion of ODE & PDE ,solution of first order ODE using Variable seperable Method	20/6/2017	
2	Exact and Non Exact Differential Equation,Integrating factor and its solution	22/6/2017	
3	solution of first order Linear and Non Linear ordinary Differerntial Equation	27/6/2017	
4	Orthogonal Trajectories in cartesian and polar co ordinate	29/6/2027	
	Syllabus Lesson No.2: Higher Order Differential Equation		
5	Discussion about second and higher order ODE & Solution of Higher order constant coefficient homogenous ODE.	07.03.2017	
6	Solution of second and higher order constant coefficient non-homogenous ODE using Undeterminant coefficient method	07.04.2017	
7	Short cut method Type-1 & Type-2	07.06.2017	
8	Short cut method Type-3 & Type-4	07.10.2017	
9	solution of Euler Cauchy equation	07.11.2017	
10	Solution of non homogenous constant and variable co efficient using Variation of parameter Method	13/7/2017	
11	solution of Legendry differential equation	17/7/2017	
	Syllabus Lesson No.3: Laplace Transform		
12	Definition of Laplace transform , inverse Laplace transform and its property	18/7/2017	
13	State and prove first shifting (Laplace and Inverse Laplace)	20/7/2017	
14	State and prove multiplication by t property for Laplace transform also inverse laplace transform and its examples	24/7/2017	
15	state and prove laplace transform of division by t and its example	25/7/2017	
16	inverse laplace transform using partial fraction	27/7/2017	
17	state and prove Convolution and second shifting theorem and its example	31/7/2017	
18	Laplace transform of derivative and Initial value problem	08.01.2017	
19	Laplace transform of periodic function , simultaneously equation	08.03.2017	
20	Laplace transform of Partial differential equation.	08.08.2017	
	Syllabus Lesson No.4 : Fourier Series		
21	Basic concept about Fourier series for 2L periodic Function and its Examples for continous and discontinous function	08.10.2017	
22	Fourier series for 2L periodic odd and even function	14/8/2017	
23	Fourier series for 2L periodic odd and even function	21/8/2017	
24	Half Range cosine and sine series	22/8/2017	
25	Fourier integral	24/8/2017	

	Syllabus Lesson No.6: Power Series Solution		
26	Basic concept of Power Series and Classification of Singularity.	28/8/2017	
27	Power series solution at ordinary point	29/8/2017	
28	Power series solution at Singular point	31/8/2017	
29	Power series solution at regular singular points type 1 and type 2	09.11.2017	
30	Power series solution at regular singular points type 3 and type 4	09.12.2017	
	Syllabus Lesson No.5 : Partial Differential Equation and its application		
31	basic concept about PDE and Seperable Variable method for Solving PDE	14/9/2017	
32	Partial differential equation, formation of PDE	18/9/2017	
33	Direct integration method for finding the solution of PDE ,Lagrange Method	19/9/2017	
34	All types of Charpit Method	21/9/2017	
35	Solution of Higher order PDE using short cut	25/9/2017	
36	Fourier series solution of heat and wave problems	26/9/2017	
	Syllabus Lesson No.7: Special Function		
37	Gamma function, Beta function, Bessel function	28/9/2017	
38	Error function and complementary Error function, Heaviside's function ect….	10.03.2017	

* in which class is actually conducted

If subject is shared between two faculties then Name of the other faculty:

Text Book: by ; Publication.

Reference Book: 1) Advanced Engineering Mathematics, by E. Kreyszig,
Publication:- **Wiley-India (2007)**
2) Engineering Mathematics Vol 2, by Baburam, Pearson

Date of preparation:
Signature of faculty: **HOD signature with date**