

DIGITAL SIMULATION OF POWER ELECTRONICS SYSTEM

2NDMTech EE (PECD)

Ref1[1] :Computer aided analysis of power electronics system – V.Rajgopalan , Marcel Dekker Inc.

Ref [2] :Microsim PSPICE A/D and basics, Circuit Analysis software , User guides

Ref [3] : MicrosimSchematics : Schematic capture software , User guide

- ONE CLASS PER ITEM

No	Course Item	Ref[1]	Ref[2]	Ref[3]	Other /diary
	MODULE -I				
1	Principle of modeling power semiconductor devices				
2	Macro models versus Micro models				
3	Thyristor model – R , RL , RLC				
4	Modeling of electrical machines (DC & AC)				
5	Modeling of control circuits of power electronics switches				
6	Computer formulation of power electronics system				
7	Review of graph theory applied to electrical networks				
8	Systematic of formulating system state equations				
9	Computer solutions of state equations				
10	Explicit and Implicit integration system				
	MODULE –II				
11	Circuit Analysis Software – PSPICE – A/D				
12	Simulation over view				
13	Creating and preparing a circuit for simulation				

14	Simulating a circuit with PSPICE / AD				
15	Displaying PSPICE simulation result				
16	PSPICE A/D analyses				
17	Simple multi run analysis				
18	Statistical Analyses				
19	Simulation example of power electronics system				
	MODULE_III				
20	Microsim PSPICE A/D				
21	Preparing a schematic for simulation				
22	Creating symbol				
23	Creating Model				
24	Analog behavioral modeling				
25	Setting up and running Analyses				
26	Viewing result				
27	Example of power electronics system				
	MODULE-IV				
28	Saber designer				
29	Placing parts , editing system properties				
30	Writing the schematic				
31	Modifying Wire attribute				
32	Performing a transient and DC analysis				
33	Placing probe in the design				
34	Performing AC analysis				
35	Invoking SaberScope				
36	Analyzing waveforms with SaberScope				
37	Performing measurements on a waveforms				
38	Varying a waveform				
39	Displaying parameter Sweep values				
40	Measuring Multi-member waveform				
41	Simulation Examples of power system				

