PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY

PANIPAT
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

LESSON PLAN

Name: - Ms. Stuti Mehla **Subject Name: - Simulation and Modeling**
Semester: -5th Sem **Subject Code:-CSE-309N**

Sr. No.	Lecture No.	Topics To Be Covered	Planned on	Covered On	Remarks
1.	L 1	**UNIT 1**: System Concepts and terminologies, Open system and closed system	17/07/19		
2.	L 2	system boundaries and environment, examples of Factory and aircraft system	18/07/19		
3.	L 3	Continuous and Discrete System with examples :entity, attributes and activity of system	22/07/19		
4.	L 4	system modeling: concept and definition	24/07/19		
5.	L 5	Types of models: static and dynamic with example	25/07/19		
6.	L 6	Model Validation :Principles and nature of computer modeling	01/08/19		
7.	L7	Differentiate b/w model verification and model validation	05/08/19		
8.	L 8	Simulation: Definition, Basic nature and conditions of simulation	07/08/19		
9.	L 9	Simulation: advantages ,disadvantages and limitation	08/08/19		
10.	L 10	Simulation of Continuous System: PURE PURSUIT PROBLEM (Definition, algorithm and flowchart)	12/08/19		
11.	L 11	Concepts of Discrete System: INVENTORY SYSTEM(Definition, algorithm, flowchart)	14/08/19		
12.	L12	Video lectures on Inventory System	15/08/19		
13.	L 13	Video lectures on Simulation of Aircraft System	19/08/19		

14.	L 14	**Modeling vs Special Purpose Simulation Packages**	21/08/19		
15.	L 15	**Design and implementation of Chandrayan-2**	22/08/19		
16.	L 16	**UNIT 2**:Analog Simulation with example, comparison between analog vs digital simulation	26/08/19		
17.	L 17	Continuous simulation vs numerical integration	28/08/19		
18.	L 18	Simulation of Chemical Reactor: Definition, assumption, algorithm and problem	29/08/19		
19.	L19	Simulation of Water Reservoir System: Definition, assumption, algorithm and problem	02/09/19		
20.	L 20	Discrete System Simulation: Types: Differentiate bw Fixed Time Step vs Event to event model with example	04/09/19		
21.	L 21	Monte Carlo Computation with architecture and differentiate b/w Monte Carlo and Stochastic Simulation	05/09/19		
22.	L 22	Random Numbers, Pseudo random numbers, Method of generation with program.	11/09/19		
23.	L 23	Generation of non-uniform distributed random numbers: Inverse Transformation method, exponential distribution method	12/09/19		
24.	L24	**Random numbers and their applications in Simulation and Data Science**	16/09/19		
25.	L 25	**UNIT 3**:Single Server Queuing System with numerical	25/09/19		
26.	L 26	Multi Server Queuing with example	26/09/19		
27.	L 27	Comparison between Single Server and Multi Queuing System	30/09/19		
28.	L 28	What is Activity Network? Simulation of Activity Network	02/10/19		
29.	L 29	Forward Pass: Pert Network with critical path computation	03/10/19		
30.	L 30	Backward Pass: Pert Network with critical Path Computation	07/10/19		
31.	L 31	Revision	09/10/19		
32.	L 32	**UNIT 4:** Inventory Model: Introduction, terms and	16/10/19		

		terminologies			
33.	L 33	Different models of Inventory System	17/10/19		
34.	L 34	Poisson and Erlang Distribution ,Differences bw poisson and erlang distribution	28/10/19		
35.	L 35	Complex Inventory Sytem with simulation	30/10/19		
36.	L 36	Variance Reduction Techniques, Experimental layout for simulation	04/11/19		
37.	L 37	Verification &Validation	06/11/19		
38.	L 38	Case Study of Sci Lab &Octave	07/11/19		
39.	L 39	Revision	11/11/19		
40.	L 40	Continuous Simulation : Video lecture on water Reservoir system	13/11/19		
41.	L41	Video lectures on Queuing system: Hot Coffee Shop	14/11/19		
42.	L42	Bank System	18/11/19		
43.	L43	**Evolution of simulation in terms of H/W and S/W(Simscript ,Simula)**	20/11/19		

(COURSE INCHARGE)