

Lesson Teaching Plan

Subject : Simulation and Modeling

Branch : MCA

Semester : 5th

Faculty Name : Sasmita Acharya

Module	Topic	No. of classes
1	1. Technique of Simulation, major application areas	1
	2. Concept of a system and environment	1
	3. Continuous and Discrete systems with examples	1
	4. Classification of system models and principles of Modeling	1
	5. Monte Carlo method and its applications	1
	6. Numerical Computational Technique for Continuous models	1
	7. Numerical Computational Technique for Discrete models	1
	8. Continuous system simulation using analog methods	1
	9. Continuous system simulation languages – CSMP III	1
	10. Sample problems on continuous system simulation	1
2	1. Discrete and continuous probability functions with examples	1
	2. Numerical evaluation of continuous probability functions	1
	3. Continuous uniformly distributed random numbers	1
	4. Random number Generators with examples	1
	5. Mid-Square and Rejection method with examples	1
	6. Testing of random numbers with examples	4
	7. Generation of stochastic variates with examples	2
	8. Arrival patterns and service times with examples	1
3	1. Discrete event simulation technique with examples	1
	2. Simulation of a telephone system, Delayed calls	1
	3. GPSS blocks, GPSS programs with examples	1
	4. Facilities and Storages in GPSS with suitable examples	1
	5. Gathering statistics in GPSS with suitable examples	1
	6. Conditional transfer in GPSS with suitable examples	1
	7. Program Control statements in GPSS with suitable examples	1
	8. Standard numerical attributes in GPSS with examples	1
	9. Sample problems on GPSS - Block diagrams and coding	1
4	1. Simulation for a single server queue – M/G/1 system	1
	2. Simulation for a two server queue – M/G/2 system	1
	3. Simulation for an inventory system	1
	4. Simulation for a scheduling system using PERT networks	1
	5. Length of Simulation run statistics	1
	6. Variance Reduction techniques with examples	2
	7. Verification versus Validation of simulation models	1
	8. Experimental Layout – Full-factorial versus fractional design	1
	9. Analysis of simulation output and simulation run statistics	1
	10. Recent trends and development	1
Total no. of classes :		42