

COMPUTER AIDED SIMULATION & MODELING

System & models:

The concept of a system, system environment, stochastic activities, continuous and discrete system, system modeling, type of models, static physical models, dynamic physical models, static mathematical models, dynamic, mathematical models, principles used in modeling, simulation of a queueing problem simulation of an inventory problem.

Simulation of continuous system:-

Continuous system models, differential equations, analog computers, analog methods, hybrid computers, digital analog simulations continuous system simulation languages, CSMP III hybrid simulation, feedback system, simulation of an interactive system, real time simulation.

Discrete system simulation:-

Probability concepts in simulation, random number generators and their testing stochastic variable generation, fixed time - step vs. event-to event model.

Simulation of queueing systems :

Arrival pattern, poisson arrival pattern, the exponential distribution, the hyper-exponential distribution, service times, simulation of a single-server queue, the normal distribution, measures of queues.

Simulation languages

Continuous and discrete simulation languages, block structured continuous simulation languages, GPSS, SIMSCRIPT, SIMULA, factor in selection of a discrete simulation language.