

MA 502 Simulation And Modeling Cr. 3: (2- 1- 0)

Definition of a system, System concepts, type of system, continuous & discrete systems,

modeling process verification & validation.

Introduction of Probability Distributions and random processes, Central limit theorem.

Estimation of mean and variance, Confidence interval, Hypothesis testing, Normal distribution, t-test, ANOVA- an Introduction

Markov chains: CTMC and DTMC

Queuing models: Basic queuing models. Little's Theorem and network of queues.

Introduction, classification of simulation models, advantages and disadvantages of simulation. Concept of simulation time and real time. Discrete system simulation.

Monte Carlo method, Random number generators.

Simulation of inventory systems

Introduction to simulation environment and software tools.

References

1. Principles of Operations Research, Wagner, PHI.
2. Simulation modeling and analysis, Law and Kelton, McGraw Hill.
3. Probability and Statistics with Reliability, Queuing and Computer Science Application, Kishore S Trivedi, Wiley.
4. System simulation, Gorden G., Prentice Hall of India.