

COURSE:

UNIT- I

Simulation – Types of Simulation: Analogue simulation, Computer simulation
Random Variable: Random Number, Pseudo-random numbers, Monte-Carlo
Simulation, Generation of Random numbers, and Simple exercises.

UNIT-II

Decision theory – Basic Terminology in Decision Theory, Steps in the decision making process, Decision-Making Environment: Decision-making under conditions of Certainty, Decision-making under Uncertainty: Maximin gain criterion or Minimax loss function, Maximax gain criterion or Minimin loss criterion, Laplace criterion, Decision-making under conditions of Risk: Expected Money Value criterion, Expected Opportunity Loss criterion, Expected value of Perfect Information and simple exercises

UNIT-III

Inventory Control 1 – Introduction, Reasons for maintenance Inventories, Types of Inventory, Inventory costs, Variables in the Inventory Problem, Other factors Involved in Inventory Analysis: Demand, Lead Time, Amount of Delivered, Order Cycle, Time Horizon, Recorder Level

UNIT-IV

Inventory Control 2 – Deterministic Inventory Model: EOQ Models without Shortages, EOQ Models with Shortages, Inventory Models with Probabilistic Demand, Re-order Level and Optimum Buffer Stock and simple exercises

UNIT-V

Goal Programming Problem (GPP): Introduction, Concept of GPP, Goal programming as an extension of LPP, single goal models, multiple goals models, multiple goals with priorities, formulation of Goal programming models, Graphical solution, extended simplex method applied to GPP.

