



BBA

Semester IV

Calicut University

Decision Science

Course Code: BBA4CJ202 • Module SYLLABUS Notes

Course Syllabus

Course Code: BBA4CJ202 | **Course Title:** Decision Science | **Semester:** IV

Module I: Introduction to Decision Science & Linear Programming

- Unit 1: Nature, Scope, and Role of Decision Science / Operations Research in Management.
- Unit 2: Linear Programming Problems (LPP) – Formulation of Business Problems.
- Unit 3: Graphical Solution Method for LPP (Maximization & Minimization).
- Unit 4: Simplex Method Algorithm & Sensitivity Analysis Overview.

Module II: Transportation & Assignment Models

- Unit 5: Transportation Problem – Mathematical Model & Initial Basic Feasible Solution (NW Corner, Least Cost, VAM).
- Unit 6: Optimality Test using MODI (Modified Distribution) Method.
- Unit 7: Assignment Problem – Mathematical Model & Hungarian Method Solution.
- Unit 8: Unbalanced Transportation and Assignment Problems.

Module III: Network Analysis & Project Management

- Unit 9: Network Representation – Events, Activities, Dummy Activities, Rules.
- Unit 10: Critical Path Method (CPM) – Early/Late Start & Finish, Float Analysis.

- Unit 11: Program Evaluation and Review Technique (PERT) – 3-Time Estimates, Project Probability.
- Unit 12: Project Crashing & Cost-Time Trade-off.

Module IV: Game Theory & Queuing Models

- Unit 13: Game Theory – Two-Person Zero-Sum Games, Pure Strategy & Saddle Point.
- Unit 14: Mixed Strategies, Dominance Principle, Graphical Method for Games.
- Unit 15: Queuing (Waiting Line) Theory – Structure, Arrival/Service Rates, Kendall Notation.
- Unit 16: Simulation – Monte Carlo Simulation Technique & Inventory Applications.

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