Advanced Decision Modeling Techniques

Network analysis: The shortest route problem, the minimal spanning tree problem, the maximal flow problem. Dynamic Programming: Deterministic and probabilistic dynamic programming. Game Theory: Simple games, Games with mixed strategies, graphical solution, solving by linear programming. Decision Analysis: Decision making with and without Experimentation, Decision Trees, Utility function. Simulation: formulation implementing a simulation model, Experimental design for simulation. Algorithms for linear programming: The dual simplex method, parametric linear programming. Integer Programming: The branch and bound technique, a branch and bound algorithms for binary linear programming a bound and scan algorithm for mixed integer linear programming, formulation possibilities through mixed integer programming. Nonlinear programming: The Kuhn-Tucher conditions, Quadratic programming, convex programming.

Text Book:
1. Operations Research - Fredrick S. Hillter and Gerald J. Liebumana, 2nd Ed. (Chap. 5, 6, 7, 14, 15,16, 17 and 18)