

## MBA201: MANAGEMENT SCIENCE

Teaching Scheme	Examination Scheme
Lectures: 3 hrs./Week  Credits: 2	Class Test – 6 Marks Teachers Assessment – 3 Marks Attendance – 6 Marks End Semester Exam – 50 Marks

### Course Objectives:

- Understand the importance of the use of OR application in decision Making environment
- To formulate LPP and Obtain Graphical Solutions & Acquire General idea of the Simplex method.
- To understand and solve transportation & assignment models.
- To know optimal sequence model and understand concepts of queuing theory.
- To identify right time for replacement of equipment and understand project management techniques

Hours: 30

**UNIT 1 (5 Hrs): Introduction**– Why Management Science? Application of optimization techniques in practical situations. Models of operation research, Decision theory- under uncertainty and Risk, Decision tree approach.

**UNIT II (10 Hrs): LPP Techniques**– Formulation of model, Graphical solution, Maximization/Minimization – Simplex Algorithm. Application of Optimization techniques in practical business situations. Sensitivity analysis

Transportation method, Optimization using MODI Method & Stepping Stone Method. Assignment techniques through MS Excel

**UNIT III (5 Hrs): Game Theory**- Two person zero-sum game,  $2 \times 2$  and  $3 \times 3$ , solutions of  $2 \times n$ ,  $m \times 2$  and  $m \times n$  games.


**Queuing models** - M/M/1 model with and without limitation of q-size M/G/1, single channel with poisson arrival rate and general service time

**UNIT-IV (10 Hrs): Replacement Problem:** Replacement of Assets that deteriorate with time with and without consideration of time value of money. Forecasting time series model.

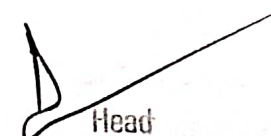
**Network Analysis** - Rules for drawing network diagram, finding Critical path & application of CPM & PERT Techniques in Project Planning & Control.

### Suggested Readings:

1. Quantitative analysis for management by Render B., Stair R.M., Henna M. E., Pearson Education
2. Quantitative Techniques in Management by Vohra, Tata McGraw Hill
3. Quantitative techniques by Kothari, Vikas Publication
4. Operation Research by J.K. Sharma, Pearson

  
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