PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY PANIPAT
Department of Management Studies

Semester: 2nd   **Faculty Name: Mr. Manish Gulyani**

Course Title: Optimization Models for Business Decisions   **Course No . MBA-201**

Sr. No.	Lecture No.	Topics to be covered	Target Outcome
1	L-1	Introduction, Meaning, Scope & Definition of Management Science	CO1
2	L-2	Operations Research: Evolution, Models of OR	CO1
3	L-3	Process & Role of OR in managerial decision making	CO1
4	L-4	Linear programming: Meaning, assumptions, advantages, scope and limitations	CO1
5	L-5	Formulation of problem	CO1
6	L-6	Solution by graphical method	CO1
7	L-7	Solution by Simplex method, Cases in simplex method: infeasibility & Degeneracy	CO1
8	L-8	Theory of Games- Pure & Mixed	CO2
9	L-9	Principle of Dominance, Arithmetic Method	CO
10	L-10	Graphic Method of Theory of Games	CO1
11	L-11	Transportation problems	CO3
12	L-12	Transshipment problems, Degeneracy Problem	CO3

Sr. No.	Lecture No.	Topics to be covered	Target Outcome
13	L-13	Case study -Transportation Problems	CO3
14	L-14	Assignment problems including traveling salesman's problem	CO3
15	L-15	Assignment problems including unbalanced, Maximization case, Restriction on Assignment	CO3
16	L-16	Case Study – Assignment Problem	CO3
17	L-17	PERT/CPM: Difference between PERT and CPM	CO3
18	L-18	Network construction, Critical Path Method	CO3
19	L-19	Calculating EST, EFT, LST, LFT, Floats	CO3
20	L-20	Probability considerations in PERT	CO3
21	L-21	Case Study – PERT & CPM	CO3
22	L-22	Decision theory	CO3
23	L-23	Decision making under uncertainty and risk	CO3
24	L-24	Decision Tree	CO3
25	L-25	Queuing theory: concept, assumptions and applications	CO4
26	L-26	Poisson distributed arrivals and exponentially distributed service time models (MM1 and MMK);	CO4

Sr. No.	Lecture No.	Topics to be covered	Target Outcome
27	L-27	Simulation Problems	CO4
28	L-28	Monte Carlo Simulation	CO4
29	L-29	Inventory Management Problems	CO4
30	L-30	Queuing Theory Problems	CO4

Suggested Reading :

1. Budnik, Frank S. Dennis Meleavey, Reichard : Principles of Operations Research, 2nd ed., Richard Irwin, Illinois – All India Traveller Bookseller, New Delhi, 1995.

2. Gould, F.J. etc. : Introduction to Management Science, Englwood Cliffs, New Jersey, Prentice Hall Inc., 1993.

3. Mathur, K and Solow, D. : Management Science, Englewood, New Jersey, Prentice Hall Inc. 1994.

4. NarangA.S. : Linear Programming Decision-Making. New Delhi, Sultan Chand, 1995.

5. Sharma, J.K. : Operations Research : Theory and Applications, New Delhi, Macmillian India Ltd., 1997.

6. Taha, H.A. : Operations Research – An Introduction, New York, Macmillan, 1989.

7. Theirouf, R.J. and Klekamp, RC. : Decision-Making Through Operations Research, New York, John Wiley, 1989.

8. N.D. Vohra : Quantitative Techniques in Management, Tata McGraw Hill, 2001.