

**SARDAR PATEL UNIVERSITY**  
**Programme: BCA**  
**Semester: V**  
**Syllabus with effect from: June-2013**

<b>Paper Code: US05FBCA01</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Operations Research</b>	

Unit	Description in detail	Weighting (%)
I	<b>Introduction to Operations Research(OR):</b> History, meaning and scope of OR Phases of OR study Types of Models Applications, advantages and limitations of OR	25%
II	<b>Linear Programming Problem(LPP)</b> Meaning Advantages and limitations Formulation of LPP Graphical solution, Simplex method – Big M method	25%
III	<b>Transportation Model and Assignment Model</b> Introduction Mathematical model of Transportation problem Initial basic feasible solution by North-west corner rule, Least-cost method, Vogel's approximation method. Optimum Solution by MODI method Introduction to Traveling Salesman Problem. Introduction to an Assignment Model Mathematical model of Assignment problem Solution by Hungarian method	25%
IV	<b>Dynamic Programming, Sequencing problems and Project Scheduling in PERT-CPM</b> Introduction to Dynamic Programming. Deterministic & Probabilistic Dynamic Programming. Shortest Route problem. Sequencing problems and Applications. Introduction to PERT and CPM Advantages and Assumptions Rules for Network construction Critical Path calculations, Total float, Free float	25%

**Basic Text & Reference Books :-**

- Taha H. A. : Operations Research, Macmillan, New York (1987)
- Sharma S.D. : Operations Research. Kedar Nath Ram Nath & Co. Meerut , 1988-89.
- Gillett B. E.: Introduction to Operations Research - a computer oriented algorithmic approach, McGraw-Hill, 1976

**Books For Additional Reading :**

- Bronson Richard : Operations Research, Schaum's outline Series, 1983.
- Kapoor V K : Problems and solutions in Operations Research, Sultan Chand & sons, 1996.

