

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (QPM)
Semester: I
Syllabus with effect from: June - 2014

Paper Code: QP - 105	Total Credit:
Title Of Paper: Operations Research - I	

Unit	Description in Detail	Weightage (%)
I	Overview of the Optimization Techniques, History of Operations Research (OR), definitions of OR, Scientific Method in OR, Methodology of OR, Applications and Scope of OR. Introduction to Linear Programming Problems(LPP), General Structure of LPP, Assumptions of LPP, Advantages and Limitations of LPP, Application of LPP.	[10]
II	Mathematical formulation of the problem, Terminologies used in LPP, Graphical Method for solving LPP, cases of degeneracy, infeasible and unbounded solutions, merits and demerits of the method.	[10]
III	Simplex Method: Introduction, Algorithm, cases of degeneracy, infeasible and unbounded solutions, Two-Phase Method- Algorithm, cases of degeneracy, infeasible and unbounded solutions,	[8]
IV	Big-M method- Algorithm, cases of infeasible and unbounded solutions, Concept of Duality, Dual Simplex method- Algorithm, cases of degeneracy, infeasible and unbounded solutions, Integer Linear Programming- Gomory Cut method- Algorithm, cases of degeneracy, infeasible and unbounded solutions.	[12]

Basic Text & Reference Books:-

- Kambo, N.S.(1991) Mathematical Programming Techniques Affiliated East-West Press Pvt.Ltd.)
- Hadley,G. (1987) Linear Programming.
- Taha, H.A.(1992) Operations Research 5th ed. (Macmillan)
- L. C. Jhamb (2009) Quantitative techniques for managerial decisions, Vol-I& II, 16th ed. (Everest Publishing House)
- N. D. Vohra (2011) Quantitative Techniques in Management, 4th ed. (Mc Graw Hill)
- V. K. Kapoor(1998) Problems & Solutions in Operations Research, 2nd ed.(Sultan Chand & Sons)
- R Sivarethinamohan (2008) Operations Research, 1st ed.(Mc Graw Hill)
- J. K. Sharma(2009) Quantitative Techniques For Managerial Decisions, 1st ed.(Macmillan)

