Programme Name	Master of Commerce
Semester	Fourth
Paper No	4.42
Course Code	
Course Name	Operation Research (Paper – 2)
Course Type	Elective Course
Effective from	DECEMBER 2012
Objective	To introduce the important ideas in operation research which are both fundamental and long lasting. To provide the theoretical aspects of the subject with practical application to real -life industrial, business problems with some changes as per the requirements.

Unit No.	Topic No.	Content	Hrs.	Marks W + %	Credit
1	01	Optimization Techniques Formulation of linear programming (LP) problem, artificial basic techniques, degeneracy, revised simplex method, bounded variable techniques, duality in LP statement of duality theorem and applications. Integer programming (IP) problem method of solving an IP problem and examples.	15	25	01
2	02	Theory of games – study of two person zero, some game problem, games with and without saddle point dominances in games, conversion of game problem into an LP problem. Formulation of non-linear programming (NLP) problem and application introduction to quadratic and tractional linear programming problems and examples.	15	25	01
3	03	Transportation Problem Meaning, definition, uses and mathematical form of the TP. Obtaining the initial feasible solution by North-West corner rule and vogel's approximation method. Testing the optimality of the initial basic feasible solution by (i) stepping stone method and (ii) MODI method. unbalanced transportation problem, Denegeracy, Examples.	15	25	01

4	04	Total Quality Management Introduction, various definitions of quality. Total Quality Management : understanding, definitions and elements), six basic concepts of TQM, David Garvin approaches of quality – quality planning quality cost, benefits of TQM, Tagauchi Method (introduction, nominal the best, smaller the better and larger the better loss function and its examples) ISO 9000 (introduction, benefits, standard, requirements, implementation, documentation, internal audits, registration)	15	25	01

References :

1. Hadley G.S (1974) : Linear programming, Addison-Wesley
2. Gass S.I. : Linear programming
3. Sharma J.K. : Intro. to O.R.
4. Taha H.A. : Operation Research - An Introduction
5. Sharma S.D. : Intro. to O.R.
6. Hillier and Lieberman : Operation Research
7. Vajda S. : Game Theory with Application
8. Hadlcy G.S. : Non-linear and Dynamic programming
9. Naddor e. : Inventory systems
10. Rao S.S.(1984) : Optimization Theory & Applications, Sec.Ed. wilev Eastarn
11. Hadley and whitin : PERT CPM Management

Note : One Question from each unit with internal options. 60 % for examples and 40 % for theory weightage compulsory for each question. And each question should contain two or three sub-questions.