Sankalchand Patel University

Faculty of Commerce

Master of Commerce (SEM – 4)

In Effect from Academic Year 2017-18

COURSE CODE: 1CM2010414	**COURSE TITLE:** OPERATION RESEARCH-2
SEMESTER-4, **COURSE TYPE :** SPECIALIZATION	
COURSE OBJECTIVE: To make the students aware about the various techniques like CPM, PERT, Queuing and Sequencing theory and its application.	

Teaching Scheme (Hours per week)		**Evaluation Scheme (Marks)**		
Lectures	Credit	University Assessment	Institutional Assessment	Total
4	4	60	40	100

Unit	Topic and Contents	Hours	Wt. (%)
1.	**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%
2.	**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%
3.	**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%
4.	**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, ISO 9000 (introduction, benefits, standard, requirements, implementation, documentation, internal audits, registration)	15	25%

References Books :

1. Gass S.I.: Linear programming
2. Hadlcy G.S: Non-linear and Dynamic programming
3. Hadley G.S (1974): Linear programming, Addison-Wesley
4. Hillier and Lieberman: Operation Research
5. Sharma J.K.: Introduction to Operation Research
6. Sharma S.D : Introduction to Operation Research
7. Taha H.A: Operation Research - An Introduction
8. Vajda S: Game Theory with Application