4th Semester	18MBA403D	Operations Research Applications	L-T-P 3-0-0	3 Credits	35 hrs

COURSE OBJECTIVES

- To create exposure to the students to apply operations research tools & techniques in various business environment.
- To provide insights on dynamic programming, integer programming, and Quadratic Programming applications
- To make use of operations research tools in the field of operations scheduling and supply chain distributions

Module – I : Overview of Operations Research –Review of Scope, Types of Operation Models, OR Techniques and tools, Dynamic programming: Dynamic programming models and applications – Graphical representation – Optimality principle. Integer programming models: Gomory's Cutting plane Algorithm, Branch– and–bound algorithm for Integer Programming.

Module – II : Scheduling System – Single machine, Flow shop and Job shop Scheduling methods –Resource constrained project Scheduling – Vehicle routing problems, Traveling salesmen problem, transportation problem (North West corner method), Queue Model.

Module – III : Bin Packing – Portfolio optimization – Quadratic Programming: Kuhn Tucker conditions, Beale's method and Wolfe's method. Staff transfers Problem– Two stage supply chain distribution problem.

BOOKS :

- KantiSwarup, P. K. Gupta and Manmohan: Operations Research, S. Chand & Co., 2014
- HamadyTaha: Operations Research, Mac Millan Co., 2016
- Fredericks, Hiller, Gerald J.LiebermanBodhibrata Nag Prectambasu, Operations research 9e, Mcgraw hill education, 9th edition, 2017.
- J.K.Sharma, Operations research Theory and applications, 2012
- Pradeepprabakarpai, Operations research – Principles and practice, oxford higher education, 2012
- Gupta P.K.Hira D.S Problem in operations Research, S.Chand and co., 2003

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