Faculty of Commerce & Business Administration

Operations Research in Management

Information :

Course Code :	MGT 430	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours
Department :	Department of Finance'				

Area Of Study :

Is an interdisciplinary branch applied mathematics and formal science that uses advanced analytical methods such as mathematical modeling, statistical analysis, mathematical optimization to arrive at optimal or near-optimal solutions to complex decision making problem. It's often concerned with determining the maximum of (profit, performance or yield) or minimum of (loss, risk or cost) of some real world objective.

Description :

Overview of O.R, and its applications in management and its methodology, Introduction to linear programming, model formulation, Graphical solutions of real-time problems, feasible solution, maximization, minimization. The Simplex method and its applications. Duality, sensitive analysis, Transportation models

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Students will increase their scientific decision-making effectiveness through utilization of operations research methods.
2 -	Gain an understanding of the importance of precise problem definition
3 -	Demonstrate the ability to identify the decision variables, parameters, constraints, and objective functions associated with a problem.
4 -	Obtain an understanding of the role of sensitivity analysis in operations research.
5 -	Become familiar with the most common models used in operations research, as well as the underlying assumptions and most common applications of these models.
c.Professional and Practical Skills: :	
1 -	Decide on appropriate operational models to analyze problems.
2 -	Establish and supply appropriate techniques to solve problems.
3 -	Defined conclusion using operational and economic arguments with proper rigor.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Project management	3	3	0
Decision analysis	3	3	0
Transportation	3	3	0
Decision analysis under risk	3	3	0

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
1st Midterm	3	3	0
Expected value of perfect information	3	3	0
Assignment Method	3	3	0
Markov analysis	3	3	0
Matrix multiplication	3	3	0
2nd Midterm	3	3	0
Absorbing system	3	3	0
Non-linear modeling: calculus based optimization	3	3	0
Models with one decision variable and unconstrained	3	3	0
Models with two decision variable and unconstrained	3	3	0
Revision	3	3	0

Teaching And Learning Methodologies :

Text book
Related published works
Examples and case studies
Individual and group assignment

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st Mid-Exam	20.00	6	
2nd Mid-Exam	20.00	11	
Attendance & Participation	20.00	13	
Final Exam	40.00	16	

Course Notes :

Brief Lecture Notes
PowerPoint Slides