

IM 423 – Operation Research
COURSE INFORMATION

Course Title: Operation Research

Code: IM 423

Contact Hours (hours/week): Lecture – 2 Hrs. Tutorial – 2 Hrs. Credit– 3.

Prerequisite: 90 Credit Hours

G R A D I N G

Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7th Week): 30%

Midterm # 2/Assignments – (12th Week): 20%

Final Exam: 40%

COURSE DESCRIPTION

Provides the basic concepts and fundamentals of management sciences, problems addressed by operations research, and problem formulations in linear programs. In includes the graphical solution of linear programs, simplex method, transportation model, assignment model, network planning, and critical path and PERT methods.

TEXT BOOK

F.Hillier and J.Lieberman, “Introduction to Operation Research”, McGraw Hill, latest edition.

REFERENCE BOOKS

Hamdy Taha, “Operations Research “ Prentice Hall, latest edition

COURSE OBJECTIVES

- To promote the scientific approach to solve management problems
 - To build up capability to construct mathematical models of practical problems and solve them.
 - To acknowledge the role of computer technology in solving problem of operations research.
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COURSE OUTLINE

Week Number 1: Course Overview.

Week Number 2: Linear Programming.

Week Number 3: Graphical Method.

Week Number 4: Linear Programming Applications.

Week Number 5: The Simplex Method.

Week Number 6: Transportations Method – Formulation and Initial Solution.

Week Number 7: 7th Week Exam

Week Number 8: Transportations Method – Finding the Optimal Solution.

Week Number 9: Assignment Method.

Week Number 10: Critical Path Method.

Week Number 11: Probabilistic Approach, Project Evaluation and Review Technique (PERT).

Week Number 12: 12th Week Exam.

Week Number 13: Project Crashing.

Week Number 14: Network Analysis – Shortest Route and Minimal Spanning Tree.

Week Number 15: Network Analysis – Maximal Flow.

Week Number 16: Final Exam.