

King Fahd University of Petroleum and Minerals

Department of Mathematics and Statistics

Course #: Stat 361 (3-0-3)

Syllabus (132) (Semester II, 2013-2014)

Dr. Slim Belhaiza

Course Title: Operations Research I

Prerequisite: Math 280, ICS 101 or ICS 102.

Textbook: To be announced.

Classes: UT 12:00 to 13:15, To be announced.

Office Hours: UTR 11:00 to 11:50, Building 5, Room, 203-2.

Objectives

The course deals with the basic concepts in operations research. We shall see how simple mathematics lays a significant role in the solution of decision making problems.

Current Catalogue description

Problem solving and decision making. Linear Programming: Formulation, graphical method, simplex method, sensitivity analysis and duality. Transportation and assignment problem. Integer Programming. Project scheduling PERT/CPM.

Week	Sections	Topics
1		Introduction, Examples of linear programs (LP)
2		Basic solutions, The fundamental theorem of (LP)
3		Relation to convexity, Pivots
4		Adjacent extreme points, Determining a minimum feasible solution
5		Computational procedure-Simplex method, Artificial variables
6		Matrix form of the Simplex Method, The revised simplex decomposition
7		Dual Linear Programs, The Duality Theorem, Relations to the Simplex Procedure
8		Sensitivity and Complementary Slackness, The Dual Simplex Method
9		Transportation Problems
10		Assignment Problems
11		Integer Programming
12		Integer Programming
13		Project Scheduling
14		Project Scheduling
15		

Grading Policy

Major 1: 25%

Major2: 25%

Homewrok: 15%

Final: 35%