



Jordan University of Science and Technology
Faculty of Engineering
Industrial Engineering Department

IE342 Operations Research (1) - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

3 Credit Hours. The course covers basic principles of building and solving mathematical models of linear systems using analytical and software tools. Topics include graphical and analytical optimization of linear systems and transportation and network models.

Teaching Method: On Campus

Text Book

Title	Operations Research: An Introduction.
Author(s)	Hamdy A. Taha
Edition	9th Edition
Short Name	Ref #1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Introduction to mathematical programming	Gerald J. Lieberman and S. Hillier	8th Edition	

Instructor

Name	Prof. Dorid Dalalah
Office Location	M5L3
Office Hours	
Email	doraid@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue, Thu : 10:30 - 11:30

Room: C5021

Section 2:

Lecture Time: Sun, Tue, Thu : 12:30 - 13:30

Room: M5124

Prerequisites

Line Number	Course Name	Prerequisite Type
293110	IE311 Numerical Methods	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction to Linear Programming (LP)	From Ref #1
Week 2	Solving LP Graphically	From Ref #1
Weeks 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	The Simplex Method, Special cases of Simplex method, Simplex computation, and Sensitivity and Post-optimal Analysis	Chapter 3 and 4 From Ref #1
Weeks 13, 14	Transportation Models & its Variants	Chapter 5 From Ref #1
Weeks 15, 16	Network Models	Chapter 6 From Ref #1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes

Course Outcome Weight (Out of 100%)	Assessment method
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Understand and appreciate the role of Operations Research in making decisions in services and manufacturing sectors. [1SO1, 1SO4] [1L7K1]

25%

Develop analytical and practical understanding of basic concepts and methods in Operations Research. [1SO1] [1L7S2]

25%

Practice examples of real-world situations where Operations Research methods are used. [1SO2] [1L7C1]

20%

Build knowledge and gain experience in using optimization software.

30%

Relationship to Program Student Outcomes (Out of 100%)

SO1	SO2	SO3	SO4	SO5	SO6	SO7
37.5	20		12.5			

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S2	L7C1
25	25	20

Evaluation	
Assessment Tool	Weight
First Exam	25%
Second Exam	25%
Final Exam	40%

Policy	
Attendance	University policy for attendance will be applied.
Homework	Three Homeworks were requested from students and were graded accordingly.

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