JORDAN UNIVERSITY OF SCIENCE AND TECHNOLOGY
INDUSTRIAL ENGINEERING DEPARTMENT

Course Number and Name	IE 344 Operations Research I
Course Description	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.
Credits and contact hours	3 Credit hours; 3 hours of lectures
Pre- or Co-requisites	EE305 Numerical Methods
Required/ Elective	Required

Text Book(s)	Taha. *Operations Research: An Introduction*. Prentice Hall, latest edition
Software tools	TORA, MS Excel
References	• Introduction to mathematical programming, Gerald J. Lieberman, S. Hiller, McGraw Hill inc., 8th ed. 2005. • INFORMS/Operations Research: http://iol-a.informs.org/ site/ Operations Research • The Math Forum: http://mathforum.org/library/topics/operations_research/

Course Objectives	Upon completion of this course, the students will • Understand and appreciate the role of Operations Research in making decisions in services and manufacturing. • Develop analytical and practical understanding of basic concepts and methods in Operations Research. • Practice examples of real-world situations where Operations Research methods are used.
Measured Outcomes	3a, 3e and 3k

Topics	**Chapters in Text**	**Evaluation**	
Introduction to Linear Programming (LP)	Chapter 1	Class Work	10
Solving LP Graphically	Chapter 2	First Exam	25
The Simplex Method	Chapters 3 and 4	Second Exam	30
Transportation Models & its Variants	Chapter 5	Final Exam	40
Network Models	Chapter 6		