بسم الله الرحمن الرحيم

217 كمي - بحوث العمليات في الإدارة (1) (3 ساعات)

QUA217 Management Science (1)

أستاذ المقرر: أ.د/ محمود مصطفى الشربيني
هاتف المكتب:4674368
البريد الإلكتروني:msherbiny@ksu.edu.sa
الصفحة الإلكترونية على الإنترنت: **https://fac.ksu.edu.sa/msherbiny/home**

Course Description:

An introduction to Operations Research for solving managerial problems and the concept of model building. Basic concepts of linear programming and its economic and managerial applications in the allocation of resources and investment planning; general formulation, graphical solution, the simplex method, the transportation problem, duality theorem, shadow prices, the principle of complementarily, sensitivity analysis to parameters of the program: the lower limit of decreasing resources and the upper limit of increasing them without affecting shadow prices, the lower limit of decreasing the profit and the upper limit of increasing it without affecting the optimal production planning, economic interpretation.(Software packages are used)

Course Aims:

The aim of this course is to understand the concept and basic principles of linear programming and its applications in economic and administrative areas of resource allocation and investment planning to manipulate the problems of administrative decisions to rationalize the cost of production and investment.

Course Outlines:

- Introduction to Management Science (Operations Research)
- Linear Programming: Model Formulation and Graphical Solution
- Linear Programming: Computer Solution and Sensitivity Analysis
- Linear Programming - Modeling Examples
- Duality and Post-optimality analysis.
- Transportation & Assignment Problems
- Project Scheduling (CPM, PERT)
- Integer Programming

Course Assessment:

	Date	Points
First Midterm Exam	Feb. 13, 2019	20
Second Midterm Exam	Mar. 20, 2019	30
Assignment		10
Final Midterm Exam		40

References:

1. **Hamdy A. Taha, Operations Research - An Introduction, Pearson Education Limited 2017, Tenth Edition**
2. **Bernard W. Taylor- introduction to management science (2016), Edition 12, Boston: Pearson.**