

Operation Research (AEC451)

Agribusiness program

Dr. Fadi Mohamed Hisham

Course Description

- This course introduces students to the theory, algorithms, and applications of optimization.
- The optimization methodologies include linear programming, queuing theory and game theory.
- The emphasis is on applications rather than the details of methodology. By the end of the course, students will be exposed to a wide variety of agribusiness that can be addressed using Operations Research techniques.

Course Objectives

1. Understand the theory, algorithms, and applications of optimization.
2. Use different quantitative tools for effective decision making.
3. Model formulation and application and application that are used in solving business decision problems.

Course Content

- Linear Programming Theory and Applications
 - Product mix profit maximization
 - Minimization of production costs (duality problem)
 - Transportation model
 - Assignment models
- Introduction to queuing theory and Applications
- Introduction to game theory and Applications

Course requirement

- Problem set
- Project
- 2 Mid-term exams
- Theoretical exam

Course grade distribution

- Theoretical exam 60%
- Mid-term exam 10%
- Problem sets 10%
- Case study report and presentation 10%
- Oral exam 10%

Textbook and Software

- **Frederick S. Hillier, Gerald J. Lieberman.** Introduction to operation research.
- **Hamdy A. Taha.** Operations research an introduction.
- Students will be using QM software during the course

Contact

- Office hours (Tuesday and Thursday from 10AM to 2PM)

- E-mail address

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- Course material

www.Fadim1.gnomio.com