Form (H)
Short course description

Course title: Graduation Project (2)	Course number and code: OPER 498
Previous course requirement: OPER 498	Language of the course: Arabic/English
Course level: Fourth year	Effective hours: 2 (2 + 0 + 0)

Course description

This course is an extension to the Project course (1). The course is designed to assist the student to introduce useful mathematical model building techniques of real world problem that the student initiated in the course OPER 497. In this course, student shall determine the best mathematical model to solve the problem. The course will provide student with necessary knowledge and procedures for conducting thorough data analysis on the data collect from previous course OPER 497. The student should provide all necessary parameters for the mathematical model suggested under the supervision of staff member. The course also involves Providing student with tools and methods needed to identify and evaluate alternatives. Finally, computer software to solve various the suggested operations Research model for the problem under study. All results of the tasks are presented in a final report then presented to the committee in the department.

Course objectives

- Introduce useful mathematical model building techniques of real world problems and the process of modeling
- Use of computer software to solve various OR models
- Selected case studies of real world problems
- Provide student with tools and methods needed to identify and evaluate alternatives
- Introduce useful mathematical model building techniques of real world problems and the process of modeling
- Use of computer software to solve various OR models

Learning outcomes (understanding, knowledge, and intellectual and scientific skills)
After studying this course, the student is expected to be able to:

Knowledge

1. Ability to use appropriate mathematical techniques to solve these models.
2. Ability to use computer software to analyze OR mathematical models
3. Ability to write reports and provide solutions and recommendations

Cognitive Skills

1. Ability to build mathematical models of real life problems related to any field of operations research
2. Ability to use appropriate mathematical techniques to solve and evaluate these models
3. Acquire additional mathematical models of real life systems
4. Ability to present mathematically supported recommendations

Interpersonal Skills & Responsibility

1. Work independently and as part of a team.
2. Manage resources, time and other members of the group
3. Communicate results of work to others

Communication, Information Technology, Numerical

1. Ability to build mathematical models of real life problems related to any field of operations research
2. Ability to use computer software to solve these models
3. Acquire additional mathematical models of real life systems
4. Ability to use appropriate mathematical techniques to test these models
5. Ability to collect and analyse required data for mathematical model

Textbook adopted and supporting references

Title of the book	**Author's name**	**Publisher's name**	**Date of publication**
Operations Research: An Introduction	H. Taha	Weily	2008
Operations Research: Applications and Algorithms	Wayne L. Winston, Jeffrey B. Goldberg	Cengage Learning	2004
Introduction to Operations Research, F. Hillier & G. Lieberman	F. Hillier & G. Lieberman	McGrow Hill	2005
Introduction to Probability Models	Sheldon M. Ross	Elsevier	2014