

Form (H)
Short course description

Course title: Graduation Project (1)	Course number and code: OPER 497
Previous course requirement: OPER 371 + OPER 313	Language of the course: Arabic/English
Course level: Fourth year	Effective hours: 1 (1 + 0 + 0)

Course description

This course is designed to assist the student to clarify and refine the application of Operations Research approach in solving problems to be undertaken by the student. The student will acquire knowledge about the chosen field of application and develop methodological understandings relevant to the topic. The course will familiarize student with the fundamental principles of information gathering, simple review and mathematical model design through the production of a brief report. It is a guided task course for each student under the supervision of a faculty member. The course will expose the student to a range of theoretical approaches, methodologies and models and enhance understanding of student's approach for formalizing real-life problem in Operations Research.

Course objectives

<ul style="list-style-type: none">• To familiarize students with basic knowledge of problem formulation in Operations Research.
<ul style="list-style-type: none">• Introduce the student to the fundamental steps of defining and refining a real-life problem.
<ul style="list-style-type: none">• To familiarize students with the resources and previous research about the application under study.
<ul style="list-style-type: none">• To familiarize students with data gathering and analysis for problem formulation.
<ul style="list-style-type: none">• Provide student with tools and methods needed to generate needed information for problem understanding and formulation.
<ul style="list-style-type: none">• To develop the ability to identify the most important performance measures in analyzing the model under study.

Learning outcomes (understanding, knowledge, and intellectual and scientific skills)

After studying this course, the student is expected to be able to:

<p>Knowledge</p> <ol style="list-style-type: none">1. Ability to define a real-life problem.2. Ability to decide the appropriate data to be collected for problem definition3. Ability to write reports to describe the problem
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<p>Cognitive Skills</p> <ol style="list-style-type: none"> 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
<p>Interpersonal Skills & Responsibility</p> <ol style="list-style-type: none"> 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
<p>Communication, Information Technology, Numerical</p> <ol style="list-style-type: none"> 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