Course Specifications

General Information

Course name	Operating Research
Course number	EBUS3305
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - To provide the students with the main concepts and practices of operations research

2 - To equip the students with basics and theories of linear programming and modeling of business problems

3 - To equip the students with the procedures of conducting duality and sensitivity analysis, transportation and assignment problems and network flow analysis

4 - To provide the students with the basics and theories of decision making, and queuing theory

Intended Learning Outcomes

Knowledge and Understanding	* have a solid knowledge and understanding of the main concepts and practices of operations research, linear programming and modeling of business problems, duality and sensitivity analysis, transportation and assignment problems, the theory of decision making, queuing theory, and network flow analysis.
Intellectual Skills	* Have the ability to design models of business problems * ,Have the ability to conduct duality and sensitivity analysis, transportation and assignment problems, and network flow analysis. * Have the ability to use the decision making and queuing theories in business problems
Professional Skills	* Have the ability to use the quantitative management and operations research within the real business context

Course Contents

1 - Chapter 1 – Introduction to Operations Research

2 - Chapter 2 – Linear Programming

3 - Chapter 3 – Duality and Sensitivity Analysis

4 - Chapter 4 – Transportation and Assignment Problems

5 - Chapter 5 – The Theory of Decision Making

6 - Chapter 6 – Queuing Theory

7 - Chapter 8 – Network Flow Analysis

8 - Chapter 7 – Game Theory

Teaching and Learning Methods

1 - - Lecturing.
2 - - Group discussions – (Case Studies).
3 - - PowerPoint presentations.
4 - - Outside reading materials if needed.

Teaching and Learning Methods for the Disabled Students

1 - N/A

Students Assessment

Assessment Method	TIME	MARKS
- Class attendance and participation	During the Semester	5
quizzes	During the Semester	5
Midterm Exam	8th week of the semester	30
Final Exam	14th Week of the semester	60

Books and References

Essential books	Eiselt H. and Sandblom C. (2010): “Operations Research: A Model-Based Approach”. Springer Science and Business Media, London, UK. Abu Naser S. (2001): “Operations Research”. 3rd Edition, Al-Azhar University-Gaza, Palestine.
Recommended books	Taha H. (2007): “Operations Research: An Introduction”. 8th Edition, Pearson Education Inc., New Jersey, US.

Knowledge and Skills Matrix

Main Course Contents	Study Week	Knowledge and Understanding	Intellectual Skills	Professional Skills	General Skill
Chapter 1 – Introduction to Operations Research	Week 1				
Chapter 2 – Linear Programming	Week 2 and 3				
Chapter 3 – Duality and Sensitivity Analysis	Week 4				
Chapter 4 – Transportation and Assignment Problems	Week 5 and 6				
Chapter 5 – The Theory of Decision Making	Week 7 and 9				
Chapter 6 – Queuing Theory	Week 10				
Chapter 8 – Network Flow Analysis	Week 11 and 12				
Chapter 7 – Game Theory	Week 13				
Solving different real problems and designing business models	Week 14				