The University of Jordan

Aqaba Branch

Faculty of Management and Finance – Department of Business Management

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Operation research
2	Course number	5201311
3	Credit hours (theory, practical)	3 (theory)
	Contact hours (theory, practical)	
4	Prerequisites/corequisites	Mathematical
5	Program title	Business Management
6	Program code	01
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Management and Finance
9	Department	Department of Business Management
10	Level of course	Fourth year
11	Year of study and semester (s)	2017/2018 first Semester
12	Final Qualification	Bachelor
13	Other department (s) involved in teaching the course	N/A
14	Language of Instruction	English
15	Date of production/revision	Sep 2017 / Jan 2018

16. Course Coordinator:

Office numbers: 375
Office hours: Monday , Wednesday , 11:30 – 12:30
Email addresses : m.almasarweh@ju.edu.jo

18. Course Description:

This course aims to enable students to learn about the following:
This course contains the definition of operations research and historical development, its importance and areas of use, and decision theory: decision matrix, decision tree, linear programming: graph method, simplified method, sensitivity analysis, binary solution theory, and special cases in linear programming: Recruitment, Business Models: Critical Path Method, Burt Method.

A- Aims:

Objectives

Introduction to Operations Research and Development.

2. Linear programming and the formation of equations.

3. Linear programming The graph method of the function maximizing the target and reducing the target function.

4. Linear Programming The Semplex method for maximizing the target function and reducing the target function.

5. The corresponding problem (binary).

6. Sensitivity Analysis of the Semplex Method for Target Function Variables and Change in Decision Factors in Limitations.

7. Add variable or new variables.

8. Add new restrictions.

9. Problems of allocation and stages of scheduling the project.

10. Building a business network (AOA or AON.

11. Analysis of the network through the review and assessment of the initiation (PERT).

12. Analysis of the network via the drainage path (CPM).

13. Possibility of completion and cost considerations in project scheduling.

14. Storage models and the importance of inventory control.

15. Costs associated with models.

16. Purchase models without deficit and purchase with a permit to exist.

17. Purchase model with quantity discount

20. Topic Outline and Schedule:

1.

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
CH1:What Is Operations Research	2. 1st week	3. Dr .almasarwah	4. - Provide a holistic and integrative view of project management and how projects contribute to the strategic goals of the organization. 5. - Understand the role of a project in organizations	Lectures Discussion Homework	**Operations Research,Elghth Edition,Hamdy A Taha**
CH2: **Modeling with Linear Programming**	6. 2nd and 3rd weeks	7. Dr .almasarwah	8. - Provide a holistic and integrative view of project management and how projects	Lectures Short Exam	**Operations Research,Elghth Edition,Hamdy A Taha**

			contribute to the strategic goals of the organization 9. - Understand why organizations have developed a formal project management process to gain a competitive advantage.		
Ch3 **The Simplex Method and Sensitivity Analysis***:*	10. 4th and 5th weeks	11. Dr .almasarwah	12. - Know the estimating Guidelines for times, costs, and resources. 13. - Gain a solid understanding of the methods and techniques for estimating and calculating project times and costs	14. - Lectures 15. - Discussion	**Operations Research,Elghth Edition,Hamdy A Taha**
Ch5 **Transportation Model and Its Variants***:*	16. 6th and 7th weeks	17. Dr .almasarwah	18. - Gain a solid understanding of the methods and techniques for estimating and calculating project times and costs. 19. -	20. - Lectures 21. - Homework 22. - Problems Solving	**Operations Research,Elghth Edition,Hamdy A Taha**
Ch6 **Network Models***:*	23. 8th and 9th weeks	24. Dr .almasarwah	25. - Master the project management tools, techniques, and interpersonal skills necessary to orchestrate projects from	27. - Lectures 28. - Problems Solving 29. - Classwork	**Operations Research,Elghth Edition,Hamdy A Taha**

			start to finish. 26.	Homework	
Ch13 **Decision Analysis and Games***:*	30. 10th and 11th weeks	31. Dr .almasarwah	32. - Recognize the importance of high-performance project teams	Lectures Short Exam	**Operations Research,Elghth Edition,Hamdy A Taha**
Ch14 **Probabilistic : Inventory Models***:*	33. 12th and 13th weeks	34. Dr .almasarwah	35. - Master the project management tools, techniques, and interpersonal skills necessary to orchestrate projects from start to finish. 36. - Explain the data needed for project implementation as well as the operations of inherited or purchased software.	Homework	**Operations Research,Elghth Edition,Hamdy A Taha**

37.

21. Teaching Methods and Assignments:

Development of ILOs promoted through the following <u>teaching and learning methods</u>:
- Lectures
- Class Work
- Problem Solving
- Discussion
- Written Assignment

22. Evaluation Methods and Course Requirements:

Evaluation Tool	Grading %
Mid-term Examination	30%
Homework/ Quizzes/ Classwork	10%
Short Exam	10%
Written Assignment	10%
Final exam	40%
Total	100%

23. Course Policies:

A- Attendance policies:

Students are expected to attend class. Students may not receive credit for a course if they do not attend 85 % of the class meetings

B- Absences from exams and handing in assignments on time:

- All students are expected to attend all exams. Student cannot retake the exams without an excuse within three days of the exam date and the instructor has the right to accept or refuse it according to the university rules.

- All students must submit home works on time otherwise the instructor will not accept it.

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

 -All the assignments and work submitted by the student should be his or her own.

- All actions of academic dishonesty including cheating, plagiarism or helping other students in such actions will be deal with strictly according to the university regulations

E- Grading policy:

- According to the Letter grading system at the University of Jordan

F- Available university services that support achievement in the course:

24. Required equipment:

2○. References:

 A- Required book (s), assigned reading and audio-visuals:

Main textbook:

   - Operations Research,Elghth Edition,Hamdy A Taha
   - *Quantitative Analysis for Management*, *eleventh Edition*, Render, stair. and brain

Name of Course Coordinator: ------------------Signature: ----------------------- Date: -----------------------

Head of curriculum committee/Department: ----------------------- Signature: --------------------------------

Head of Department: ------------------------ Signature: --------------------------------

Head of curriculum committee/Faculty: ----------------------- Signature: --------------------------------

Dean: --- -Signature: --------------------------------

Copy to:
Head of Department
Assistant Dean for Quality Assurance