Study plan No.	**2022/2021**		**University Specialization**		**Management Information Systems**
Course No.	**0506721**		**Course name**		**Decisions Modeling and Analysis**
Credit Hours	**3**		**Prerequisite Co-requisite**		
Course type	☐ MANDATORY UNIVERSITY REQUIREMENT	☐ UNIVERSITY ELECTIVE REQUIREMENTS	☐ FACULTY MANDATORY REQUIREMENT	☐ Support course family requirements	✓Mandatory requirements ☐ Elective Requirements
Teaching style	☐ **Full online learning**		**Blended learning**		✓**Traditional learning**
Teaching model	☐ **2Synchronous: 1asynchronous**		✓**face to face : 1synchronous**		**Traditional**

Faculty member and study divisions information (to be filled in each semester by the subject instructor)

Name	Academic rank	Office No.	Phone No.	E-mail	
Raed M. Alqirem	**Professor**	**190**	**0779996111**	**drraed@zuj.edu.jo**	
Division number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**

Brief description

This course covers the development, implementation, and utilization of business models for managerial decision making. Systems Thinking tools and techniques for analytical modeling and simulation are discussed. Students will learn techniques for analytical modeling including decision analysis, optimization and simulation in complex systems. Examples are introduced that cover applications in strategic planning, financial management, operations, project management, and marketing research.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc.)	Turban, Sharda, and Delen, Decision Support and Business Intelligence Systems, 9/e.2018			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	1 Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics (7th Edition) by Cliff Ragsdale 2 Business Dynamics: systems thinking and modeling for a complex world, John Sterman 3 Powersim Software.			
Supporting websites	https://study.com/academy/lesson/systems-thinking-in-management-definition-theory-model.html			
The physical environment for teaching	✓Class room	✓labs	✓Virtual educational platform	☐ Others

Necessary equipment and software	Powersin Software (for building and analyzing Business Models) Microsoft Excel
Supporting people with special needs	
For technical support	

Course learning outcomes (S *= Skills, C= Competences K= Knowledge,)*

No.	Course learning outcomes	The associated program learning output code
	Knowledge	
K1	Understand the assumptions and limitations of decision modeling. And DSS tools	
K2	Gain an understanding of how business problems are frequently solved using decision models.	
K3	Develop an ability to identify situations where decision modeling can be useful.	
K4	Understand and critically review reports by systems thinking tools.	
	Skills	
S1	Skills to lnow how and why modeling is used in the support system environment	
S2	Identify and differentiate different model components	
S3	Develop and demonstrate presentation skills	
S4	Develop and demonstrate group skills: leadership and group management in solving problems	
	Competences	
C1	Demonstrate an ability to solve problems by creating and running linear programming models.	
C2	Demonstrate an understanding of linear & non-linear programming, transportation & transshipment modeling, simulation, decision analysis, and goal programming for making multi-criteria decisions.	
C3	Demonstrate competence in developing some common models graphically and analytically	
C4	Interpret model result in the context of the business situation and explain in plain language	

Mechanisms for direct evaluation of learning outcomes

Type of assessment / learning style	Fully electronic learning	Blended learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
First exam	0	**0**	%20	0
Second / midterm exam	%30	**%30**	%20	30%
Participation / practical	0	**0**	10	30%

applications				
Asynchronous interactive activities	%30	**%20**	0	0
final exam	%40	**%50**	%50	40%

Note: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

Schedule of simultaneous / face-to-face encounters and their topics

Week	Subject	learning style*	Reference **
1 **2**	Chapter 1,2,3: Management support system : An overview (Decision-Making Systems, Modeling and support , Decision Support Systems concepts, decision phases)	**Lecture**	
3	Chapter 4: Decision-Making Systems, Modeling and support	**Lecture**	
4 **5**	Effective use of spreadsheets for modeling: review of key excel functions, and modeling decisions involving financial issues	**Lecture**	
6 **7** **8**	Introduction to Systems Thinking: tools for modeling decisions, graphical tools and analytical tools	**Lecture**	
9 **10** **11**	Non-Linear Optimization models, Decision making under uncertainty, Introduction to simulation modeling	**Lecture**	
12 **13** **14** **15**	Testing Some Simulation Models: Operations Models Financial Models Marketing Models Decision Modeling Problems	**Lecture**	
16	**Final Exam**		

*** Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.**
**** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.**