

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

Course Description: Scientific Methods in Management

1- Basic Information:

Course Name	Scientific Methods in Management
Course ID	SMM
Contact Hours (Registered Sessions)	16
Contact Hours (Synchronized Sessions)	16
Mid Term Exam	-
Exam	75 min
Registered Sessions Work Load	16
Synchronized Session Work Load	16
Credit Hours	24

2- Pre-Requisites:

Course	ID
None Scientific Methods in Management	SMM

3- Course General Objectives:

Scientific Methods in Management helps in solving problems in different environments that need decisions. The module covers topics that include: linear programming, Transportation, Assignment, and CPM/ MSPT techniques. Analytic techniques and computer packages will be used to solve problems facing business managers in decision environments.

This module aims to introduce students to use quantitative methods and techniques for effective decision-making; model formulation and applications that are used in solving business decision problems.

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4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	Knowledge and understanding - Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type
ILO2	Cognitive skills (thinking and analysis) - Be able to build and solve Transportation Models and Assignment Models
ILO3	Communication skills (personal and academic). - Be able to design new simple models, like: CPM, MSPT to improve decision – making and develop critical thinking and objective analysis of decision problems.
ILO4	Practical and subject specific skills (Transferable Skills). - Be able to implement practical cases, by using TORA, Win QSB
ILO5	
ILO6	
ILO7	
ILO8	

5- Course Syllabus (24 hours of total synchronized sessions;24 hours of total Recorded Sessions)

- **RS:** Recorded Sessions; **SS:** Synchronized Sessions;

ILO	Course Syllabus	RS	SS	Type	Additional Notes
ILO1	Introduction to Operations Research (OR) Operations Research definition and origin. Essential features of the OR approach. Quantification of factors. Stages in OR study.			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO2	Introduction to Foundation mathematics and statistics Linear			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars	

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	Programming (LP), LP and allocation of resources, LP definition, Linearity requirement			<input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO3	Expressing LP problems, Limitations or constraints, Maximization Then Minimization problems.			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO4	Linear Programming – Graphical Solutions, Introduction To Graphical LP Maximization solution			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO5	Graphical LP Minimization solution, Introduction, Simplex method definition, formulating the Simplex model			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO6	Linear Programming – Simplex Method for Maximizing. Simplex maximizing			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO7	Example containing mixed limitations, Duality Theory, The Primal Vs- Dual Solutions			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	
ILO8	Decision making tree			<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices	

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			<input type="checkbox"/> Others	
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6- Assessment Criteria (Related to ILOs)

ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1		Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO2			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO3			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO4			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO5			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

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ILO6			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO7			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
ILO8			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

7-Practice Tools:

Tool Name	Description
Scientific Methods in Management	

8-Main References

Quantitative Methods for Decision Makers Fourth Edition Mik Wisniewski

9-Additional References

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