

### **SESSION PLAN**

### Lecture / Tutorial / Laboratory / Workshop

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Course Particulars	
#: EA221	Title: Operations Research

	Session Particulars	
#: 1	Title: Introduction to Operations Research	Hrs:2

	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
1	Introduction to Operations Research - Problem solving process - Mathematical Models

Prepared by: Approved by:

Designation Designation

Name Dr. Amr Abd El Aziz Name Dr. Amr Abd El Aziz

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<u>Lecture</u>
Source Material
Fredrick S. Hiller and Mark S. Hiller: "Introduction to Management Science" A Modeling and Case Studies Approach with Spreadsheets
Supplementary Material
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Course Particulars		
#: EA221	Title: Operations Research	

	Session Particulars	
#:2	Title: Linear Programming: Model Formulation	Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
1	Applications to Linear Programming Model Formulation - Decision variables - Objective function - Technical constraints - Non-negativity constraint

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Course Particulars	
#: EA221	Title: Operations Research

	Session Particulars	
#: 3	Title: Applications of Linear Programming	Hrs: 2

	Learning Outcomes / Abilities Gained*
#	Outcome Description
1	Application to product mix problem
2	Application to diet problem
3	Application to blending problem
4	Application to media selection problem

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		Course Particulars	
#: EA22	1 Title: Operations Research		
		Session Particulars	
#: 4	Title: Application	ons of Linear Programming (continued)	Hrs: 2
		LEARNING OUTCOMES / ABILITIES GA	AINED*
#		Outcome Description	
1.	Application to assi		
2.	Application to tran	sportation problem	
3.	Application to port		
4.	Application to work scheduling		
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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#: 5	Title: Graphical solution	Hrs: 2

	Learning Outcomes / Abilities Gained*
#	Outcome Description
1.	Application to graphical solution - Showing different shapes of area of feasible solutions - Solving problems to find the optimal solution (max or min)

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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#:6	Title: Special cases in Graphical solution	Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*	
#	Outcome Description
1.	Problem on infeasibility case
2.	Problem on unboundedness case
3.	Problem on multiple optimal solutions case

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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#: 7	Title: 7 <sup>th</sup> week exam	Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
1.	Outcome Description Solving the answer for the 7 <sup>th</sup> week exam as model answer

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#: EA221	Title: Operat	tions Researd	ch
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#: 8	Title: Simplex Method (Maximi	zation Case)	Hrs: 2
	LEARNING OU		BILITIES GAINED*
#		Outcome D	
1.	Problems on the simplex Method	(Maximization	Case)
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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#: 9	Title: Simplex Method - Big M method ( Minimization Case)	Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*
#	Outcome Description
1.	Problems on the simplex Method - Big M method ( Minimization Case)

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#: EA22	1 Title:	Operations Research
		Session Particulars
#: 10	Title: Transportation Pro	oblem (Northwest Corner Method) Hrs: 2
	LEARNI	NG OUTCOMES / ABILITIES GAINED*
#		Outcome Description
1.	Problems on the transporta	ation Problem (Northwest Corner Method)
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Na	me Dr. Amr Abd El Az	ziz Name Dr. Amr Abd El Aziz

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#: EA221		Title: Operations Resea	arch
		Session Par	TICULARS
#:11	Title: Transporta	ation Problem (Least Cost	Method) Hrs: 2
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#	L		e Description
1.	Problems on the tra	ansportation Problem (Lea	
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(	Course Particulars
#: EA221	Title: Operations Research

Session Particulars		
#: 12	Title: 12 <sup>th</sup> week exam & Assignment Problem	Hrs: 2

LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description	
1.	Solving the 12 <sup>th</sup> week exam as model answer	
2.	Assignment Problem (Hungarian Method) - Minimization problem	

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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#: 13	Title: Assignment Problem (Hungarian Method) + Transshipment	Hrs:2
LEARNING OUTCOMES / ABILITIES GAINED*		

	LEARNING OUTCOMES / ABILITIES GAINED*		
#	Outcome Description		
1.	Problems on the Assignment Problem (Hungarian Method) - Maximization problems		
2.	Transshipment Problems		

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	Course Particulars
#: EA221	Title: Operations Research

	Session Particulars	
#: 14	Title: Project Management (Program Evaluation and Review Technique)	Hrs: 2

	LEARNING OUTCOMES / ABILITIES GAINED*				
#	Outcome Description				
1.	Problems on the Project Management (Program Evaluation and Review Technique)				

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Designation Designation

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#: EA221 Title: Operation			search			
		SESSION PA	ARTICULARS			
#: 15 Title: Project Management (Critical			h Method)	Hrs: 2		
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Ш		EARNING OUTCOMES		AINED*		
1.	Outcome Description  Problems on the Project Management (Critical Path Method)					
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