OBE based Teaching Lesson Plan 2019-20

Program: B.Com(Professional)

Course Name: OPERATIONS RESEARCH

Course Code:C4 15 MC 601

Name of the Teacher- Mr. Dileep Kumar

Semester: VI

Lecture hours: 60

Course	Course Outcomes	T level
Outcome		Indicator
No.		
CO1	Describe the nature and scope of OR Models and	T2
	its applications for Business decision making.	
CO2	Develop a Linear Programming model and	T6
	maximization or minimization of objective	
	function by using graphical method.	
CO3	Solve a Linear Programming problem by using	T3
	simplex or Big-M method for business decision	
	making.	
CO4	Solve a Transportation problem for business	T3
	decision making using various methods	
CO5	Solve an assignment problem for business	T3
	decision making by using Hungarian method	
CO6	Develop a project network diagram and analysis	T6
	by Pert or CPM method for project management.	

Module	Course	No. of	Pre-Class	Instructional	Assessment	T level
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No. &	Outcome	Lecture	Activity	techniques		
Topics	No.	Hours		-		
Covered						
Module –	CO1	4	YouTube video	Online	Evaluation	T2
1:			(NPTEL)	Videos	through	
Introductio				• Lecture with	MCOs	
n to OR:				the help of		
Origin,				ne neip of		
Definitions,				powerrom		
features,				presentation		
methodolo				Discussion		
gy, OR						
Models &						
Techniques						
, scope,						
limitations.						
Module 2	CO2	12	YouTube video	Lecture		T6
- Introducti				Case Study	Evaluation	
on to				Discussion	through tests	
Linear				Problem	and MS excel	
Program				solving		
ming				30171118		
12 Hrs						
Basic						
Concepts,						
Constructi						
Linear						
Program						
Model,						
Problems						
on East						
Formulati						
Graphical						
Solutions,						
Solution						
of						
Maximiza						
Minimizat						
ion						
Problems						
(Simple						
Problems)						
Module 3:	CO3	14		Lecture		T3
Simplex				Discussion	Evaluation	
Method:				Problom	through tests	
Introducti						
				solving		

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Basic					
Solutions					
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Artificial					
variables –					
Simplex					
Algorithm					
- Artificial					
Starting					
Solution -					
Bio-M					
Method -					
Minimizat					
ion of LPP					
Duality					
- Duality					
(Simple					
Problems					
Only)					
			_		TTO
Module 4:	CO4	14	• Lecture		T3
Module 4: Transport	CO4	14	LectureCase Study	Evaluation	T3
Module 4: Transport ation	CO4	14	LectureCase StudyDiscussion	Evaluation through tests	Т3
Module 4: Transport ation Problem:	CO4	14	 Lecture Case Study Discussion Problem 	Evaluation through tests and MS Excel	Τ3
Module 4: Transport ation Problem: Introducti	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	Τ3
Module 4: Transport ation Problem: Introducti on - Linear	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem –	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution –	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West Corner Method	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West Corner Method – L cost Cost	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West Corner Method – Least Cost	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	T3
Module 4: Transport ation Problem: Introducti on - Linear Programm ing Formulati on of the Transport ation Problem – Methods of Finding Initial Solution – North West Corner Method – Least Cost Method –	CO4	14	 Lecture Case Study Discussion Problem solving 	Evaluation through tests and MS Excel	Τ3

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Method -					
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Only). Module 5: Assignme	CO5	8	LectureDiscussion	Evaluation through tests	T3
Only). Module 5: Assignme nt	CO5	8	LectureDiscussionCase study	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem:	CO5	8	 Lecture Discussion Case study Problem 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Calutian	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt D 11	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem –	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem – Enumerati	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem – Enumerati on	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem – Enumerati on Method – Ci l	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	Τ3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem – Enumerati on Method – Simplex	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3
Only). Module 5: Assignme nt Problem: Introducti on – Mathemati cal Statement of the problem – Solution Methods of Assignme nt Problem – Enumerati on Method – Simplex Method –	CO5	8	 Lecture Discussion Case study Problem solving 	Evaluation through tests and MS Excel	T3

ation Method - Solving Problems Using Hungarian Method					
Only.					
Module 6: Network Analysis:	CO6	8	LectureDiscussionBroblem	Evaluation through MCOs. group	16
Introducti on – Network Analysis – Guidelines			 Problem solvingCase Study	activity and tests	
for constructi					
on or network					
diagram –					
Determini					
stic Time					
Estimates					
- Developin					
g a Project					
– Network					
– Project					
Duration					
& Critical					
Path -					
Forward					
Pass –					
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Float -					
Probabilist					
ic Time					
Estimates					
– ifference					
between					
PERT &					
CPM.					

Continuous Internal Assessment

- Class test 1 (before midsem exam):First week of January
- Assignment
- Class test 2 (before end sem exam):Last week of February.

Books for Reference:

- Anderson Sweeney Williams: An Introduction to Management Science Quantitative Approaches to Decision, Thomson.
- Chacko, George K: Applied Operations Research/Systems Analysis in Hierarchical Decision Making, North Holland Publishing Co.
- Taha, Hamdy A: Operations Research, Prentice Hall, India.
- Hiller/Lieberman: Introduction to Operations Research, Tata McGraw Hill.
- Sharma S D: Operations Research, Kedarnath Ramnath & Co.

Approved by: