

OBE based Teaching Lesson Plan 2019-20

Program: B.Com (Travel & Tourism)

Course Name: Operations Research

Course Code: C2 15 MC 602

Semester: VI

Lecture hours: 60

Faculty in-charge: Dr. Poornima Vijaykumar

Course Outcome No.	Course Outcomes	T level Indicator
CO1.	Describe the nature and scope of OR models and its applications for Business decision making.	T2
CO2.	Develop linear programming models by using graphs for maximization and minimization objectives and interpret such solutions.	T6
CO3.	Solve Transportation problems for business decision making and interpret such solutions.	T3
CO4.	Solve assignment problems for business decision making and interpret such solutions.	T3
CO5.	Compare and contrast different Queuing models and its applicability on arriving at business solutions.	T4
CO6.	Solve business problems by using Monte-Carlo simulation technique.	T3

Module No. & Topics Covered	Course Outcome No.	No. of Lecture Hours	Pre-Class Activity	Instructional techniques	Assessment	T level
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<p>Module - 1: Introduction to Operation Research Origin, Definitions, features, methodology, OR Models & Techniques, scope, limitations.</p>	CO1	4 Hrs	Reading on Scope of O.R. in Tourism Sector	Lecture, Discussion, Presentation	Question & Answer	T2
<p>Module - 2: Introduction to Linear Programming Introduction - Construction of the LP Model - Graphical LP Solution - Solution of maximization and minimization model (problems relating to product mix, media selection, fund allocation, work-shift allocation)</p>	CO2	12 Hrs	Read on introduction to LPP and its application in business	Lecture, Discussion, Presentation and Problem Solving	Solve extra problems from the work sheet/ Question & Answer	T6
<p>Module - 3: The Transportation Problem Definition of the Transportation model - the Transportation Method - Linear Programming Formulation of the Transportation Problem - Methods of finding Initial solution - North- West Corner Method - Least</p>	CO3	16 Hrs	Read on Transportation problem and its application in business decisions	Lecture, Discussion, and Problem Solving	Solve extra problems from the work sheet/ Question & Answer	T3

<p>Cost Method – Vogel’s Approximation Method – Test for Optimality – MODI Method - Economic Interpretation of U_i’s and V_j’s, (special cases on prohibited routes, unbalanced and maximization).</p>						
<p>Module - 4: The Assignment Problem Introduction – Mathematical Statement of the problem – Solution Methods of Assignment Problem – Enumeration Method – Transportation Method – Hungarian Method- (problems on travelling sales- men and crew assignment problems).</p>	CO4	10 Hrs	Read on Assignm ent Problems and its applicati on in theTouris m Sector	Lecture, Discussion, and Problem Solving	Solve extra problems from the work sheet/ Question & Answer/ Test	T3
<p>Module - 5: Queuing Theory Introduction – Features – Service system – Components of queuing system - Different queuing models – Problems on single- Server queuing model</p>	CO5	6 Hrs	Read on Applicati on of Queuing Theory in business decisions	Lecture, Discussion, and Problem Solving	Solve extra problems from the work sheet/ Question & Answer	T4

only.						
Module - 6: Simulation Meaning - Definition - Characteristics - Steps of simulation process Basic probability concepts - Random numbers - Problems using Monte -Carlo technique.	CO6	12 Hrs	Read on Simulatio n technique and its applicati on in decision- making	Lecture, Discussion, and Problem Solving	Solve extra problems from the work sheet/ Question & Answer	T3

Continuous Internal Assessment:

- December 2nd - 8th: Assignment - 10 marks
- February 19th - 23rd: Class test / Online Test - 10 marks

Books for Reference:

- Budnik, Frank S Dennis Mcleaavey& Richard Mojena: Principles of Operation Research, AIT BS, New Delhi.
- Gould F J: Introduction to Management Science, Englewood Cliffs N J Prentice Hall
- Kalavathy S: Operation Research, Vikas Pub Co.
- Naray J K: Operation Research, Theory and applications, McMillan, New Delhi.
- Richard, I. Levin & Charles A. Kirkpatrick: Quantitative Approaches to Management, McGraw Hill, Kogakusha Ltd.
- Sharma J K: Operation Research, Theory and Applications, McMillan, New Delhi.
- Srivastava V. K. et al: Quantitative Techniques for Managerial Decision Making, Wiley Eastern Ltd.
- Taha Hamdy: Operations Research, Prentice Hall of Indi.

Approved by: OBE Team