E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI-14.
(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Re-accredited (3rd Cycle) with Grade A+ and CGPA 3. 51 by NAAC

CBCS With OBE

DEPARTMENT OF MATHEMATICS-UG
DIPLOMA COURSE
(w.e.f. 2022- 2023 Batch onwards)

COURSE STRUCTURE

Contact Hours: 90 Hrs   **Credits: 2**

S.No	Semester	Subject Code	Title of the Paper
1	III & IV	**22MD1**	Diploma Course in Operations Research
2	III & IV	**22MDP**	Practical II

Department of Mathematics			Class: II B.Sc.		
Sem	Category	Course Code	Course Title	Credits	Contact Hours
III & IV	Diploma Course	22MD1	Diploma Course in Operations Research	2	90
		22MDP	**Practical II**		

Course Objectives

1. To study the Simplex and Dual Simplex method.
2. To study the applications of Sequencing problem and inventory control
3. To provide the practical, knowledge of operations research by solving several problems

Course Content:

Unit I

The computational procedure - uses of Artificial Variable

Unit II

Sequencing problem: Problems of sequencing – Processing n jobs through two machines – Processing n jobs through k machines – Processing 2 jobs through k machines.

Unit III

Inventory control - I – factors affecting inventory control-An inventory control problem –The concept of EOQ –Deterministic inventory problems with no shortages

Unit IV

Inventory control – I –Deterministic inventory problem with shortages-Problems of EOQ with price breaks.

Unit V

Multi – item deterministic Problems –Dynamic order quantity

Book for study:

Kanti Swarup,P.K.Gupta,Man Mohan, "*Operations Research*"
Sultan Chand & Sons,Educational Publishers, New Delhi,2016

Unit – I   : Chapter 4: 4.3 & 4.4

Unit – II   : Chapter 12:12.2 & 12.3 to 12.6

Unit – III   : Chapter 19: 19.7 to 19.10

Unit – IV   : Chapter 19: 19. 11   & 19.12

Unit – V   : Chapter 19: 19.13 & 19.14

Books for Reference:

1.   Arumugam S.and Thagapandi Isaac A., *Topics in Operations Research:Linear programming*,.NewGamma Publishing House, Palayamkottai ,June 2012.

2.   Gupta P.K., ManMohan, *Problems in Operations Research*, Sultan Chand & Sons, Delhi, (2003)

3.   Sharma J.K., 4th Edition. *Operations Research Theory and Applications*, Macmillan Publishers India Ltd., (2010)

List of Problems :

1. Simplex method of solving a LPP-Problem1.

2. Simplex method of solving a LPP-Problem2.

3. Charne's method of penalty(Big M Method)

4. Economic Order Quantity

5. Problem of EOQ with finite replenishment.

6. Deterministic inventory problem with shortages

7. Problems of EOQ with price breaks

8. Problem of EOQ with warehouse capacity

9. Sequencing problem 1: Processing n jobs through two machines.

10. Sequencing problem Processing n jobs through k machines.

11. Sequencing Problem 1: Processing 2 jobs through k machines.

12. Inventory problems

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DEPARTMENT OF MATHEMATICS
(w.e.f. 2022- 2023 Batch onwards)
CBCS With OBE
Question Pattern
Diploma Course in Operations Research

Internal

Sub code : 22MD1

Duration : 2 hrs　　　　　　　　　　**Maximum Marks** : 25

Part – A

I. Answer all the Questions: 　　　　　　　　**(5 x 1 = 5 marks)**

Fill in the blanks(2) /Choose (3)

Part – B

II. Answer any Two Questions out of Five Questions: **(2 X 5 = 10 marks)**

Part – C

III. Answer any One Questions out of Five Questions: **(1 X 10 = 10 marks)**

External

Duration : 3 hrs　　　　　　　　**Maximum Marks** : 75

Part – A

I. Answer all the Questions: 　　　　　　　　**(10 x 1 =10 marks)**

Fill in the blanks(5) /Choose (5)

Part – B

II. Answer any Five Questions out of Eight Questions: **(5X 7 = 35 marks)**

Part – C

III. Answer any Three Questions out of Five Questions: (3 X 10 = 30marks)

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Practical
Diploma Course in Operations Research

Subject Code: 22MDP

Duration   : 3 hrs   **Maximum Marks   : 100**

I.	Internal	-	40
II.	External	-	60