

E.M.G.YADAVA WOMEN'S COLLEGE, MADURAI-14.
(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Re-accredited (3rd Cycle) with A⁺ grade by NAAC)

CGPA 3.51

CBCS

DEPARTMENT OF MATHEMATICS

(w.e.f. 2017- 2018 onwards)

Title of the paper : Certificate Course in Operations Research

Sub Code : 17MC1

Non Semester

Contact : 2

Objective :

To study the techniques of Operations Research and
Linear Programming.

Unit-I Introduction-Origin and Development of O.R - Nature and features of O.R.-
Scientific method in O.R.- Modelling in O.R.

Unit-II General LPP- Mathematical formulation of a LPP- Canonical Form - Matrix
form-standard form.

Unit-III Linear programming problem-Definition-Feasible solution-Basic feasible
solution-Optimum basic feasible solution-Degenerate Solution- Slack and Surplus
variables –Graphical solution of a LPP.

Unit-IV The Assignment Problem - Mathematical formulation of the problem-
Hungarian Algorithm-Travelling Salesman Problem

Unit-V Transportation Problem - Finding feasible solution - North-West Corner
method - Vogel's Approximation method - Optimal solution of Transportation
problem (Both balanced & Unbalanced Transportation Problem).

Text book:

Kanti Swarup,P.K.Gupta,Man Mohan,*Operations Research*,

Sultan Chand & Sons,Educational Publishers,New Delhi,2011

Reference Books:-

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

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(w.e.f. 2017- 2018 onwards)

Title of the paper : Practical I-Certificate Course In Operations Research

Sub Code : 17MCP

Non Semester

Contact : 1

Objective:

To Provide the practical, Knowledge of Operations Research by Solving Several Problems.

Problems

- 1.Mathematical Formulation of LPP-Production Allocation Problem.
- 2.Mathematical Formulation of LPP-Diet Problem.
- 3.Graphical Method-Optimal Solution(Bounded)
4. Graphical Method-Optimal Solution(Unbounded)
- 5.North West Corner Method
- 6.Row Minima Method.
7. Column Minima Method.
- 8.Least Cost Method
- 9.Vogels Approximation Method
- 10.Balanced Assignment Problem
- 11.Unbalanced Assignment Problem
- 12.Travelling Salesman Problem

