

SRI VENKATESWARA UNIVERSITY
B.A/B.Sc. DEGREE COURSE IN
STATISTICS(WM)SEMESTER SYSTEM
WITH CBCS

SEMESTER V
W.E.F. 2022-2023

Skill Enhancement Courses (SECs) for V Semester, from 2022-23
(Syllabus-Curriculum)

COURSE 6A: OPERATION RESEARCH - I

(Skill Enhancement Course(Elective),
05 CreditsMax.Marks: Theory :100 +
Practicals: 50

UNIT-I

Introduction of OR – Origin and development of OR – Nature and features(Characterstics) of OR –Scientific Method in OR – Modeling in OR – Advantages and limitations of Models- General Solution methods of OR models – Applications of Operation Research.

UNIT-II

Linear programming problem (LPP) -Mathematical formulation of the problem - illustrations on Mathematical formulation of Linear programming of problem. Graphical solution of linear programming problems with maximizing and minimizing objective function up to 3 variables

UNIT-III

Simplex Method – Solution- Feasible Optimum solutions – Basic feasible solution – Non- Degenerate, Degenerate and un bounded solutions- Canonical or Standard form of LPP – Characterstics - Slack and Surplus variable - Simplex Algorithm - Problems

UNIT-IV

Artificial variable technique- Big-M method – Steps involved for getting optimum solution

- Two-phase simplex method -Steps involved for getting optimum solution - problems

UNIT-V

Simulation: Definition, Types of simulation, Random variable, Random number, Pseudo-random numbers, Monte-Carlo Technique, Generation of random numbers and problems.

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Formulation of LPP
2. Graphical Method for maximization
3. Graphical Method for minimization
4. Graphical Method for Unbounded Solution
5. Simplex method for maximization
6. Simplex method for minimization
7. Big M- Method
8. Two – Phase Simplex method .
9. Monte -carlo technique of simulation