

# 17HS041 Sampling Techniques and Design of Experiments Lab

## COURSE DESCRIPTION AND OBJECTIVES

To discuss various sampling techniques that can be used to select potential respondents to a survey. The objective of a descriptive survey study is simply to obtain certain information about a population of interest. The objective of an analytical survey study is to make comparisons between different subgroups of a population. The objective of Design of Experiments (DOE) is to establish optimal process performance by finding the right settings for key process input variables. Design of Experiments is a way to intelligently form frameworks to decide which course of action you might take.

## COURSE OUTCOMES

After the completion of the course, the student will be able to achieve the following outcomes:

COs	Outcomes
1	Draft a sampling technique for a survey.
2	Able to assess different errors that occur in a sample surveys
3	Apply the principles of design for the efficiency of the investigation
4	Providing an understanding of interactions among causative factors.
5	Determining the levels at which to set the controllable in order to optimize reliability

1. Estimation of population Mean, variance by SRSWOR.
2. Estimation of population Mean, variance by SRSWR.
3. Comparison of proportional, optimum allocations with SRSWOR.
4. Systematic Sampling .
5. ANOVA-CRD.
6. ANOVA - RBD with one missing observation.
7. ANOVA - LSD with one missing observation.

### Text Books:

1. Telugu Academy BA/BSc III year paper - III Statistics - applied statistics - Telugu academy by prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.Papaiah Sastry.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI.