

OBJECTIVES:

1. This gives an idea of logical construction of Experimental Design and applications of these designs now days in various research areas.
2. Factorial designs allow researchers to look at how multiple factors affect a dependent variable, both independently and together.

COURSE LEARNING OUTCOMES : The students shall get

- 1) Knowledge about comparing various sampling techniques.
- 2) Carry out one way and two way Analysis of Variance,
- 3) Understand the basic terms used in design of experiments,
- 4) Use appropriate experimental designs to analyze the experimental data.

COURSE:

SAMPLING TECHNIQUES:

Estimation of population mean and its variance by

1. Simple random sampling with and without replacement.
Comparison between SRSWR and SRSWOR.
2. Stratified random sampling with proportional and optimum allocations.
Comparison between proportional and optimum allocations with SRSWOR.
3. Systematic sampling with $N=nk$. Comparison of systematic sampling with Stratified and SRSWOR.

DESIGN OF EXPERIMENTS:

1. ANOVA - one - way classification with equal and unequal number of observations
2. ANOVA Two-way classification with equal number of observations.
3. Analysis of CRD.
4. Analysis of RBD Comparison of relative efficiency of CRD with RBD
5. Estimation of single missing observation in RBD and its analysis
6. Analysis of LSD and efficiency of LSD over CRD and RBD
7. Estimation of single missing observation in LSD and its analysis
8. Analysis of 2^2 with RBD layout
9. Analysis of 2^3 with RBD layout

Note: Training shall be on establishing formulae in Excel cells and deriving the results. The excel output shall be exported to MS Word for writing inferences.

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