PGSTAT – 105/ MASTAT – 105
Linear Models and Design of Experiment

U.P. Rajarshi Tandon Open University, Prayagraj

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Blocks & Units Introduction

The present SLM on *Linear Model & Design of Experiment* consists of nine units with three blocks.

The *Block - 1 – Linear Estimation and Analysis of Variance,* is the first block, which is divided into three units.

The *Unit - 1 – Linear Model and BLUE,* is the first unit of present self learning material, which describes Linear Estimation- estimable functions, estimations and error space, Best linear unbiased estimate (BLUE), Markov theorem distribution of quadratic form, Estimable linear hypotheses generalized F and T tests.

In *Unit – 2 – Analysis of Variance- I,* the main emphasis on the Analysis of Variance : one-way and two-way classification with equal number of observation per cell and analysis with missing observations.

In *Unit – 3 – Analysis of Variance- II,* we have focussed mainly on Analysis of Variance: one-way and two-way classification with unequal number of observation per cell, analysis with missing observations, Tukey's test general two-way classification, Analyses of covariance.

The *Block - 2 –Design of Experiment* is the second block with three units.
In *Unit – 4 – Basic Designs,* is being introduced the Terminology and basic Principles of Design, CRD, RBD and LSD, analysis with missing observations.

In *Unit – 5 – Factorial Experiments* is discussed with 2^3 , 2^n , 3^2 and 3^3 factorial experiments with its analysis.

In *Unit – 6 – Confounding* has been introduced, Orthogonality, Complete and Partial confounding, construction of confounded factorial experiments.

The *Block - 3 – Advance Theory of Design of Experiment* has three units.

Unit – 7 – BIBD and PBIBD dealt with Balanced Incomplete Block Design (BIBD), Partially Balanced Incomplete Block Design (PBIBD), construction of BIBD and PBIBD, association schemes and construction, resolvable and affine resolvable design.

Unit – 8 – Split and Strip Plot Design, comprises the Intra block and inter block analysis, Split Plot Design, Strip Plot Design.

In *Unit – 9 – Other Advance Design*, we have discussed the Dual and linked block design, Lattice Designs, Cross-over designs, optimal designs- optimal criteria, robust parameter design, response surface design – orthogonality, rotatability and blocking, weighing designs, mixture experiments

At the end of every block/unit the summary, self assessment questions and further readings are given.