

**Master in Science/ Master in Arts
(Statistics)**

**PGSTAT-04 / MASTAT-04 (New)
PGSTAT-05 / MASTAT-05 (Old)**

Survey Sampling

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- **Block–2, Unit – 3 & 4; and Block–3, Unit – 5 & 6 are authored by Dr. Raghaw Raman Sinha.**
- **Block – 1, Unit – 1, 2 & 3 are authored by Dr. Shruti.**

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Block

1

Basic Sampling Procedures

Unit 1

Theory of Sampling

Unit 2

Basic Techniques of Sampling - I

Unit 3

Basic Techniques of Sampling - II

Block

2

Advanced Random Sampling Procedures

Unit 4

Stratified Sampling and Use of Auxiliary Information

Unit 5

Cluster and Multi-Stage Sampling

Block

3

Varying Probability Sampling

Unit 6

Methods of Selection and Ordered Estimators

Unit 7

Unordered Estimators

BLOCKS INTRODUCTION

The present SLM on Survey Sampling consists of three Blocks. Block-1 – Basic Sampling Procedures, with three units; Block-2 – Advanced Random Sampling Procedures, with two units; and Block-3 - Varying Probability Sampling, with two units. Three units have been described in Block-1 while two units in Block-2.

The first introductory **Block-1**, describes the concept of probability sampling with its application in sample surveys. The basic techniques and methodologies of some important sampling designs such as simple random sampling, stratified random sampling, systematic random sampling and others are explained with their properties.

The first unit of **Block-2** explains the stratified random sampling with its advance concepts and use of auxiliary information in the estimation of population parameters. Unbiased estimate of population mean in stratified random sampling and its properties are explained. It also includes the allocation of sample size in different strata as well as post and deep stratification. Further, ratio and regression methods of estimation are explained to understand the application of auxiliary information with suitable examples.

The second unit of Block-2, deals with the cluster sampling and its properties are revealed along with the examples.

Block-3 consists of varying probability sampling in sixth and seventh units. The first unit of present block explains the procedure of selecting a sample and estimation of population mean, under probability proportional to size, with and without replacement. Des- Raj's estimator in ordered estimator is discussed in the second part of this unit.

The last unit in Block-3 deals with the estimation of unordered estimators. Horwitz-Thompson Estimator in this class of unordered estimators is explained to estimate the population mean. Midzuno System and Narain Method of sampling are also given with examples in this unit.

At the end of every block, summary of the units and some unsolved questions are given in the exercise for practice.