

## **Stat-212 Sampling Technique**

**100 Marks: 03 Credits**

**Number of Class: 35-40**

**Introduction:** Detailed Study of Census, Post Enumeration Check, Concept and Scope of Sampling, Census versus Sample Survey, Uses of Sample Survey, Principles of Sample Survey, Principle Steps in Sample Survey. . Preparation of Questionnaire, Schedules, Instruction etc, Survey Enumeration, Pilot Survey. Requirement of a Good Sample Design.

**Sampling Preliminaries:** Probability and Non-probability Sampling, Sampling with and without Replacement and with Equal Probabilities, Sampling and Non-sampling errors, Bias, Accuracy and Precision.

**Probability Sampling:** Procedure of Drawing a Probability Sampling. Simple Random Sampling with and without Replacement, Stratified Sampling, Systematic Sampling, Cluster Sampling with Equal Probabilities. Estimation of Mean, Proportion, Ratio. Estimated Variance and Confidence Intervals, Optimum Allocation. Sample Size Determination for Estimating Mean and Proportion. Precision of Stratified, Systematic and Cluster Random Sampling Compare to Simple Random Sampling.

**Regression with Auxiliary Information:** Ratio, Difference, Regression and Product Methods of Estimation. Estimation for Population Total, Mean, Variance and Proportion. Comparison of Sampling Procedures.

**Non-Random Sampling:** Purposive/Judgment Sampling, Quota sampling, Convenience Sampling and Snowball Sampling. Merits, Demerits and their Applications.

### **Text**

1. Cochran, W.G. (2002): *Sampling Techniques*, 4<sup>th</sup> edition, Wiley Eastern, New Delhi.

### **References**

1. Islam, M.N.: *An Introduction of Sampling Methods: Theory and Applications*.
2. Mukhopadhyay, P. (2000): *Theory and Methods of Survey Sampling*, Prentice-Hall of India (P) Ltd., New Delhi.
3. Murthy, M.N. (1977): *Sampling Methods*, 2<sup>nd</sup> edition, Statistical Publishing Society, Calcutta.
4. Sukhatme, P.V., Sukhatme, B.V., Sukhatme, S. and Asok, C. (1984): *Theory of Survey with Applications*, 2<sup>nd</sup> edition, ISAS, New Delhi.
5. Thomson, S.K. (1992): *Sampling*, John Wiley and Sons, New York.