

Sampling Theory (3)

(Effective Fall 2007)

Prerequisite: Stat 325 or Engr 311.

Catalog Description: Mathematical development of sampling. Consideration of simple probability sampling including simple random, stratified random, cluster and multistage sampling. Deriving estimates and variances of estimates for different sampling designs.

Goal: Prepares the students majoring in the mathematical sciences for careers involving Statistics.

Learning Outcomes for Major: This course addresses one or more of the student learning outcomes for the major.

Upon completion of his/her degree from the University of Tennessee at Martin with a major in mathematics, the graduate will be able to:

- i. apply mathematical concepts and principles to perform numerical and symbolic computations.
- ii. use technology appropriately to investigate and solve mathematical and statistical problems.
- iii. write clear and precise proofs.
- iv. communicate effectively in both written and oral form.
- v. demonstrate the ability to read and learn mathematics and/or statistics independently.

Teaching Objectives: The student will:

1. Learn differences in simple random sampling, sampling with replacement and other types of sampling.
2. Estimate population means, totals, proportions, and ratios.
3. Estimate sample sizes for estimating population means and totals.

Text(s): Sampling, Second Edition, Thompson, 2002. ISBN: 0-471-29116-1.

Outline:

Chapter	Title (Sections)
1	Introduction
2	Simple Random Sampling
3	Confidence Intervals
4	Sample Size
5	Estimating Proportions, Ratios, and Subpopulation Means
6	Unequal Probability Sampling
11	Stratified Sampling
12	Cluster and Systematic Sampling
	Various other Topics Selected by the Instructor

Disability Services: The University of Tennessee provides reasonable accommodations (academic adjustments and auxiliary aids) to ensure equal access to educational content and university programs for students with disabilities. Any student eligible for and requesting accommodations due to a disability must provide instructors with a letter of accommodation from Disability Services. For additional information, please contact the Disability Services office at 209 Clement Hall, (731) 881-7605.