Students requiring accommodations as a result of disability, must contact the Centre for Students with Disabilities 604-291-3112 or csdo@sfu.ca

Prerequisite:

STAT 350.

Textbook:

Sampling Design and Analysis by Sharon Lohr, published by Duxbury Press.

Calendar Description:

An introduction to the major sample survey designs and their mathematical justification. Associated statistical analyses.

Outline:

This course develops the statistical theory required for constructing and analyzing complex sample surveys. Applications to be discussed may include e.g., the Gallup Poll, market surveys, the Canadian Labour Force Survey, and forest surveys.

1. **The Role of Randomization in Sample Surveys:** Bias, standard error, and root mean squared error, survey terminology.
2. **Simple Random Sampling:** Using random number generators and tables to take a simple random sample, the sampling frame, estimating means, totals, and proportions, the finite population correction factor, confidence limits, problems with the use of the normal approximation, choosing the sample size.
3. **Stratified Random Sampling:** Advantages of stratification, estimating gains in precision, confidence limits, optimal sample sizes, effects of errors in calculated stratum sizes and in optimal allocation, stratification after selection.