Students requiring accommodations as a result of disability, must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

Instructor: Dr. Steven Thompson

Prerequisite:

STAT 350.

Textbook:

No Textbook Required

Calendar Description:

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

Outline: **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.
4. **Ratio and Regression Estimates:** Purpose and examples, bias, standard error, confidence limits, optimal conditions, optimal allocation, weak dependence on usual regression assumptions.
5. **Systematic Sampling:**