STATISTICS 4530 (FORMER 3530)
SURVEY SAMPLING

The word *population* means the total collection of objects or people about which an investigator wishes to gather information. The sample is a subset of the population that is taken according to some probability law. There is a variety of reasons why sampling is done. In general, it results in considerable gains, especially in time, cost and accuracy. It is a scientific and objective procedure of selecting elements or objects from the population into a sample which is expected to be representative of the population. Today, sample survey is recognized as a vital method of gathering information on every aspect of our society. In some studies, sampling is the only practicable way of gathering information. To determine the average life of an expensive product, for example, it is absurd to insist on observing the entire population of the product until all members die out!

Text. There are many text books available on elementary sample survey methods. One popular book which can be used by students with limited mathematics backgrounds is *Elementary Survey Sampling*, by L. Schaeffer, W. Mendenhall and R.L. Ott.

Marks. The exact mark allocation for assignments, midterm test and final examination is usually decided by the course instructor; however, it is typical to assign 50% for term mark and 50% for the final examination.

Calendar description. **3530 Survey Sampling** covers basic concepts, simple random sampling, unequal probability sampling and the Horvitz-Thompson principle, sufficiency, design and modelling in sampling, ratio and regression estimators, stratified and cluster sampling, methods for elusive and/or hard- to-detect populations.
Prerequisites: Either Statistics 3411 or both Mathematics 1001 and one of Statistics 2501 or 2560 or the former 2511.
Note: Credit will be awarded for only one of Statistics 4530 and the former 3530.

Offered: *Contact the Deputy Head (Statistics) in the Department of Mathematics and Statistics for information regarding the scheduling of this course.*