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Office Hours: Wednesdays, 11:30-13:00.


Grading

The final grade will be based on the following three components:

- (a) Assignments (20%)
- (b) Midterm Test (32%)
- (c) Final Exam. (48%)

NOTE: It is the Department's policy that tests missed for any reason, including illness, cannot be made up. If you miss the midterm test because of illness (to be confirmed by a valid medical note), the final exam can count for 80% of your final grade.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

IMPORTANT: PLEASE NOTE THAT THERE IS NO “100% FINAL EXAM” OPTION IN THIS COURSE.
Notes:

a. The midterm will take place in class on Thursday, March 5, 2019.
b. **Midterm test will cover until weeks 7 inclusively.**
c. There will be no make-up tests.
d. The final examination will cover everything taught in the course.
e. Assignments will be handed bi-weekly and collected in class.
f. Late assignments will not be accepted.
g. There are no supplemental privileges in this course.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Chapters</th>
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| 1     | **Chapter 1: Introduction**  
  Why use surveys?  
  What is a good survey?  
  Basic terminology for survey, sampling  
  Sources of error |
| 2 & 3 | **Chapter 2: Simple Probability Samples**  
  Definitions of Probability sampling  
  Simple Random Sampling  
  Estimation of means and totals  
  Estimation of proportions  
  Sampling weights  
  Confidence Intervals  
  Determining sample size  
  Systematic Sampling  
  Randomization theory results for SRS  
  Prediction Approach for SRS  
  Use an SRS |
| 4 & 5 | **Chapter 3: Stratified Sampling**  
  Definition and theory  
  Sampling weights in Stratified Random Sampling  
  Allocation of sample to strata  
  Defining strata  
  Model based inference for Stratified Random Sampling  
  Quota sampling |
| 6 & 7 | **Chapter 4: Ratio and Regression Estimation**  
  Estimation of a ratio  
  Ratio estimation of a mean or total  
  Regression estimation of a mean or total  
  Ratio estimation with Stratified Samples  
  **Mid-Term Test** |
| 8 & 9 | **Chapter 5: Cluster Sampling with Equal probabilities**  
  Definition and notation  
  One-Stage Cluster Sampling  
  Clusters of equal sizes  
  Clusters of unequal sizes  
  Two-stage cluster sampling  
  Designing a Cluster Sample  
  Systematic sampling |
10 & 11  Chapter 6: Sampling with Unequal Probabilities
  One-stage sampling with replacement.
  Two-stage sampling with replacement.
  Unequal probability sampling without replacement
  Randomization theory results and proofs

12 & 13  Chapter 8: Non-response & Review
  Effect of non-response in samples
  Designing Surveys to reduce non-response errors
  Weighting for differential non-response
  Imputation for non-response
  Parametric models for Nonresponse

Academic Integrity and the Academic Code of Conduct
This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia’s website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." [Undergraduate Calendar, Sec 17.10.2]