Term Project: To design and carry out a sampling project as detailed below.

Homework and term project to be done independently

Week TOPIC

Jan 20 introduction, questionnaire design, Review of Probability
HW due Jan 27: Read (L) 1-19 and Review 549-562.
Problems (L) p. 19 / 2, 6, 7. 28
Design a one-page questionnaire to get student's opinion on some topic in the news, or of particular interest to you. Describe some target population you might be interested in, and a frame you might use. How might your sampled population differ from your target population?

Jan 27 simple probability samples
HW due Feb 3: Read: (L) 25-51;
Problems (L) p. 61/ 1, 2, 3, 6,8,12, 21, 30, 33

Feb 3 Simple Random Sampling. Randomization & design based approaches
HW due Feb 10: Read (L) 51-61 and paper
Problems: (L) p. 65/ 20, 22, 26, 27, 31

Feb 10 stratified random sampling
HW due Feb 17: Read (L) 73-100
Problems: (L) p. 101 / 1,2, 3, 6, 8, 10, 27, 36
Feb 17 Ratio, Regression, and Difference Estimation  
HW due Feb 24: Read (L) 117-154  
Problems (L) p. 155 / 1, 2, 3, 15, 38, 40  

Feb 24         Review  

March 2        MIDTERM EXAM        Open book & notes.  Computer allowed

Note: Written proposal for term project due March 9th

March 9   cluster sampling with equal probability
HW due March 23: Read: (L) 165-199,  
Problems: (L) p. 207/ 1, 2, 6, 7, 14, 35

March 12–20    Spring Break

March 23     two-stage cluster sampling  
HW due March 30: Read: (SMO) 303-321; (L) 182-196  
Problems: (L) p. 322/4,5,10, 14,15,16; (L) p. 209/6,7,14,25

March 30    sampling with unequal probabilities
HW due April 6; Read: (L) 219-254  
Problems: (L) p. 267/1, 2, 3, 4, 5, 38, 43

April 6    Non-Response, 2-Phase Sampling, Post-Stratification, Editing & Imputation
HW due April 13: Read (L) 329-356  
Problems: (L) p. 358 / 1 , 2 , 20

April 13th   Estimation of Population Size, Randomized Response, Survey Quality  
HW due April 20: Read (L) 495-505, 527-544  
Problems (L) 505/ 1 , 2 , 3 , 4 , 13 ; p. 546 / 1 , 2

April 20   Presentations of Term Project
April 27th  Last Class   Presentations of Term Project Term Project Paper Due,
Term Project: To design and carry out a sampling project.
1) The project will **NOT** involve sampling, measuring, observing or surveying of humans.
2) The project must be **original** and **done independently**.*
3) Written proposals for the project will be due by March 9th.
4) Powerpoint presentations on April 20th and 27th.
5) The final written paper giving details will be handed in on April 27th.
6) Your sampling project will involve multiple tasks,
   Statement of objectives
   Definition of Target Population
   The Frame
   Elements
   Sampling units
   Sample Design (Stratification, cluster sampling, sampling with unequal probabilities, multi-stage sampling. Your design should not just be a simple random sample of elements)
   Type of estimator (Unbiased, Ratio, regression, difference)
   Method of Measurement
   Measurement instrument
   Pilot study (you should use this to justify sample sizes)
   Organization of fieldwork
   Organization of data management
   Data analysis
   Conclusions
   Written Report

*The project must be original and done independently. Any material copied from any source (even as few as 3 words) must be put in quotes and the source cited. If any material comes from a source, even if you change the wording must be specifically cited and footnoted. (It is not sufficient to put a reference at the end of the paper. You must indicate specifically which material and ideas came from which source.)