Course Syllabus

Applied Sampling Techniques For Survey Research (STAT 6236),  
Instructor: Howard Hogan, Ph.D.  
Fall Semester 2015 -- Monday, 6 PM to 8:30 PM

Contact Information:
E-mail: hhogan@gwu.edu 
In emergencies: Cell 202-413-4819

Office Hours:
Mondays, 5:30 to 6 PM by appointment or after class. Other times will be arranged as needed. I will also respond quickly to questions sent by e-mail and consult via telephone. If you need help, ask before you get too far behind!

Course Description:
From University Bulletin: This class introduces the major approaches now applied in sampling: how to decide on what type of sample to draw, how to select the sample, and how to analyze the results. Included are simple random, stratified, systematic, cluster, and multistage designs. Ways to control sampling errors are emphasized and efforts to reduce non-sampling errors are discussed.

Learning Objectives
As a result of this class, you will be able to
- Identify major approaches now applied in sampling
- Efficiently design, select, and analyze survey samples of various complexity
- Recognize ways to control (minimize) sampling error through the design of a sample

Texts:
Kalton Introduction to Survey Sampling, Sage Publications, 1983

Class Participation:
Students are expected to attend, come prepared and participate actively. If you believe you may have to miss more than one class, consider taking this course another semester.

Homework:
Each assignment will be due at the beginning of the next class. We will discuss the homework at the beginning of each class. No late homework will be accepted unless prior arrangements have been made. Homework assignments will not be graded for correctness, but will be assessed based on completeness.
**Sampling Exercises:**

To provide hands-on experience in selecting and analyzing probability samples, you will complete two exercises in which you will select random samples of public school districts from the state of New York. We will use the Common Core of Data (CCD) from the National Center for Education Statistics (NCES) as the basis of our sampling frame. You will be required to turn in a sampling plan and a document summarizing the results of your sample. You will be graded on both the statistics and the documentation.

**Examinations:**

There will be two exams, and each will be worth 20 percent of your final grade.

**Grading Criteria:**

<table>
<thead>
<tr>
<th>Element</th>
<th>Percent of Total Grade</th>
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<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
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<tr>
<td>Class participation</td>
<td>15%</td>
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<tr>
<td>Exercises</td>
<td>20%</td>
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<tr>
<td>Midterm Exam</td>
<td>20%</td>
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<td>Final Exam</td>
<td>20%</td>
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**Grading Scale:**

- A = 90 to 100%
- B = 80 to 89%
- C = 70 to 79%
- F = 70%

(Subject to downward revision. + / - will be awarded within these ranges.)

**Academic Integrity**

I personally support the GW Code of Academic Integrity. It states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see: [http://www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html)

**University Policy:**

- **Religious Observance:** Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.

- **Incomplete Grades:** At the option of the instructor, the symbol “I” may be recorded if a student is unable to complete the work, and if the instructor is informed of and approves the reasons before the date when the grade must be reported. The course work must be completed within a designated time period agreed upon by the instructor and the student.
Course Schedule/Outline: Students are expected to have read through the assigned chapters before the class where the material will be covered, and come prepared with questions.

August 31:
Overview
Basic concepts of statistics
SMO 1, 2 & 3, K1

September 7: NO CLASS

September 14:
Simple Random Sampling
SMO 4.1 - 4.4

September 21:
Simple Random Sampling
SMO 4.5 - 4.7, K 2

September 28:
Stratified Random Sampling
SMO 5.1 - 5.5

October 5:
Stratified Random Sampling
SMO 5.6-5-12, K4

October 12:
Ratio Estimators
SMO: 6.1 - 6.3

October 19:
Ratio Estimators
SMO: 6.4 - 6.5

October 26:
Non-sampling errors & Quality Assurance
K 8, K 9 Plus handouts

November 2:
Systematic Sampling
SMO 7, 7.2, 7.6 - 7.8; K 3

November 9:
Cluster Sampling
SMO – 8.1 – 8.5

November 16:
Cluster Sampling
SMO 8.6 – 8.10

Exercise 2 due

November 23:
Two Stage Cluster Sampling
SMO 9.1 - 9.4, K 5

November 30:
Two Stage Cluster Sampling
SMO 9.6 - 9.8, K 6

December 7:
Specialized Designs
SMO 5.11; K 7

December 14:
Final Exam Due