Columbian College of Arts & Sciences  
Survey Design and Data Analysis Graduate Certificate Program

Course Syllabus

Applied Sampling Techniques For Survey Research (STAT 6236), Fall Semester 2011
Instructor: Howard Hogan, Ph.D.
Tuesdays, 6 PM to 8:30 PM

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

Office Hours: Tuesdays, 5:30 to 6 PM by appointment. I will also respond quickly to questions sent by e-mail and to 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:
Recommended: Kalton Introduction to Survey Sampling, Sage Publications, 1983

Class Participation:
Students are expected to attend, come prepared and participate actively. Students are expected to have read through the assigned chapters before class and come prepared with questions.

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.

**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>
</tr>
<tr>
<td>Class participation</td>
<td>15%</td>
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<tr>
<td>Exercises # 1</td>
<td>10%</td>
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<tr>
<td>Exercise #2</td>
<td>10%</td>
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<tr>
<td>Midterm Exam</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
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100%

**Grading Scale:**

- A = 90 to 100%
- B = 80 to 89%
- C = 70 to 79%
- F = 70%
  (Subject to downward revision)

**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)
**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 30:
- Overview
- SMO: 1 & 2, K1

September 6:
- Basic concepts of statistics
- SMO 3

September 13:
- Simple Random Sampling
- SMO 4.1 - 4.4

September 20:
- Simple Random Sampling
- SMO 4.5 - 4.7, K 2

September 27:
- Stratified Random Sampling
- SMO 5.1 - 5.5

October 4:
- Stratified Random Sampling
- SMO 5.6-5-12, K4

October 11:
- Ratio Estimators
- SMO: 6.1 - 6.3

October 18:
- Ratio Estimators
- SMO: 6.4 - 6.5

October 25:
- Non-sampling errors & Quality Assurance
- K 8,K 9 Plus handouts

November 1:
- Systematic Sampling
- SMO 71, 7.2, 7.6- 7.8 ; K 3

**Examination Chs 1 to 6**

November 8:
- Cluster Sampling
- SMO – 8.1 – 8.5

November 15:
- Cluster Sampling
- SMO 8.6 – 8.10

November 22:
- Two Stage Cluster Sampling
- SMO 9.1 - 9.4, , K 5

November 29:
- Two Stage Cluster Sampling
- SMO 9.6 - 9.8, K 6

December 1:
- Specialized Designs
- SMO 5.11; K 7

December 7:
- Optional Review
  (Unless needed for make up)

December 13:
- Final Exam