SURV 744/SURVMETH 744 Topics in Survey Methodology

Spring 2016

CLASS MEETINGS: Thursday, 3:00 to 5:40 pm; 1208 Lefrak (MD); Perry 300 (MI). First class January 7, 2016; last class April 14, 2016.

INSTRUCTORS:

Yan Li
Room 1218 Lefrak Hall
Email: yli6@umd.edu
Tel: 301-314-6570 or 301-314-7911

Lecturers: Mike Brick (mikebrick@westat.com), Bob Fay (bobfay@westat.com), Jane Li (janeli@westat.com), Jill Montaquila (jillmontaquila@westat.com), and Nat Schenker (nhs1@cdc.gov)

OFFICE HOURS: By appointment; questions will be most quickly answered by email to the instructor.

WEB SITE: Class notes and homework assignments will be posted on CTools. Students are expected to download the class notes for class. The class notes will be posted in a folder under Resources. Homework assignments will be posted in under Assignments. Homework should be submitted electronically to CTools.

GRADING:

Presentations: Each student will make one formal class presentation in a form suitable for a professional meeting. Presentation dates will be assigned by lottery after the final enrollment size is known. 25 %

Essays: Students are also required to write two essays on selected topics. The presentation topic must be different from the two essay topics. 25 % each essay

Exercises on specific topics will be posted on CTools. You should post your answers on or before the due date and time in the Assignments area of CTools. 25 %

TEXT BOOKS: A list of selected journal articles is posted on CTools. A selected subset of these are available in the Course Pack under Resources. Students may also find it useful to have access to the Handbook of Statistics, Vol. 29A: Sample Surveys: Design, Methods, and Applications, edited by D. Pfeffermann and C.R. Rao, published by North-Holland, 2009.
DETAILS ON COURSE ASSIGNMENTS

Each student is required to prepare two written essays and one oral presentation on approved topics. At least one of the two essays must be selected from the topics in the course list; one essay may be some other relevant topic in sampling approved by the instructor. The oral presentation must be on a topic entirely distinct from the written essays. The topic for the oral presentation can also be selected from the readings list and must be approved by the instructor. Dates for the presentations will be assigned by lottery after the final enrollment for the class is known.

Essays

Each written essay will be a review of a topic and should include several references. At most two students can be teamed up if they share a common interest of the same topic. An essay should be a critical review of the nature of the problem. It should be a synthesis of the statistical issues and not simply a repetition of the contents of the papers. Each essay should be approximately 2,500 words and should be typewritten. The format for the essays is:

- Line spacing: 1 ½
- 1” margins
- Times New Roman font size of 12
- Pages should be numbered
- Use informative section titles

The due dates for the essays are:

Proposal for Essay #1: due at the beginning of class, **February 11, 2016**

| Description of a well-defined topic (not too broad or narrow) |
| Motivations/significance/impact of the selected topic |
| Selection of papers to review -- Reference list (2-4 papers) |

Essay #1: due at the beginning of class, **March 10, 2016**

Proposal for Essay #2: due **Monday, March 21, 2016, 5PM**

Essay #2: due **Sunday, April 17, 2016, 11PM**

Presentations

Each oral presentation will be a 15 to 20 minute presentation on a particular paper (or papers). The style for the presentation will be very similar to that used at the Joint Statistical Meetings, and *the presenter will not be allowed to continue beyond 20 minutes*. The presentation
should attempt to convey the essential points included in the paper and, if possible, should conclude with a short critique of the research. The presentations should use overhead projection slides (e.g., PowerPoint) or handouts formatted as overhead slides. The slides should be prepared as if the room held 50 people.

**Choice of paper:** due at the beginning of class, **two weeks prior** to the presentation date

- Motivations/significance/impact of the selected paper
- Selection of the paper to present -- Reference

**Draft of the slides:** due at the beginning of class, **one week prior** to the presentation date

**Exercises**

Students will also be asked to complete exercises illustrating some of the key issues covered in lectures. These exercises will be posted to the CTools web site and students will have one week (unless otherwise specified) to submit their work on these, showing all the details of how they arrived at their solutions.

Late essays/homeworks will be penalized as follows:

- 1 day late: 10% off (Fri for homework due on Th)
- 2-6 days late: 25% off (Sat-Wed for homework due on Th)
- 7-10 days late: 50% off (Th-Su for homework due on previous Th)
- 11+ days late: no credit

**Video Recording**

Class will be video recorded and available for later viewing. From the program website, http://www.jpsmclasses.umd.edu, select “Welcome Guest” on the up right, and login (click on Login) with username surv744sp16 and password survsamp
**LIST OF TOPICS, TENTATIVE DATES, AND THE INSTRUCTORS:**

<table>
<thead>
<tr>
<th>DATE (Thu, 2016)</th>
<th>TOPIC</th>
<th>LECTURER</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 7</td>
<td>Weighting Methods</td>
<td>Jill Montaquila</td>
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<td>January 14</td>
<td>Genetic analysis of complex survey data</td>
<td>Yan Li</td>
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<td>January 21</td>
<td>Small area estimation 1</td>
<td>Bob Fay</td>
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<tr>
<td>January 28</td>
<td>Small area estimation 2</td>
<td>Bob Fay</td>
</tr>
<tr>
<td>February 4</td>
<td>Establishment Surveys</td>
<td>Jill Montaquila</td>
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<td>February 11</td>
<td>Telephone and Address-Based Sampling</td>
<td>Jill Montaquila</td>
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<td>February 18</td>
<td>Single Imputation</td>
<td>Jane Li</td>
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<tr>
<td>February 25</td>
<td>Sampling in Time</td>
<td>Jill Montaquila</td>
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<td>March 3</td>
<td>Rare Populations</td>
<td>Bob Fay</td>
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<tr>
<td>March 10</td>
<td>Multiple Imputation</td>
<td>Nat Schenker</td>
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<tr>
<td><strong>March 17</strong></td>
<td><strong>No class</strong> (Maryland Spring Break)</td>
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<td>March 24</td>
<td>Measurement error</td>
<td>Bob Fay</td>
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<tr>
<td>March 31</td>
<td>Dual Frame Sampling and Estimation</td>
<td>Mike Brick</td>
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<td>April 7</td>
<td>Disclosure Risk and Avoidance</td>
<td>Jane Li</td>
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<td>April 14</td>
<td>Variance Estimation for Imputed Data</td>
<td>Bob Fay</td>
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