

Statistics 480: Survey Sampling Techniques

Winter 2024

Monday, Wednesday 2:30–4 (2260 USB)

Professor: Walter R. Mebane, Jr.

Office: 7735 Haven Hall (cell 607/592-0546); email wmebane@umich.edu

Office hours: Tuesday 2:00PM–4:00PM or other times by appointment.

Lab: Friday 2:30PM–4:00PM (B844 EH)

GSI: Ashlan Simpson (<ashlanjo@umich.edu>)

GSI Office hours TBA.

Textbook: Scheaffer, Mendenhall, Ott, Gerow, *Elementary Survey Sampling*, 7th edition. (some supplemental reading on next page)

Homework: **Ungraded homework** will be **assigned** in section by Jan 19, Feb 2, 16, Mar 15, and **graded homework** will be **due** on Feb 2, 16, Mar 15, Apr 29; graded homework is **due at 2:30PM Friday**. For each graded homework **teams** will be randomly created and grades will be assigned by team based on each team's submission. The **team memberships** will be announced on Canvas no later than Jan 17 (teams for hw 1), Jan 31 (teams for hw 2), Feb 14 (teams for hw 3), Mar 13 (teams for hw 4). Collaborative work on all the homework is encouraged, but each team must submit answers written by that team using the team's own expressions and presentations.

Project: There will be a **final group project** (teams of three), due at noon on April 24. Each team will make a presentation of their project to the class on either April 17 or April 22. See [project.pdf](#). The quality of the presentation will factor into the “project” grade.

Exams: There will be two exams, one during class time (tentatively scheduled for April 1) and the final exam (Thursday, April 30, 4:00pm–6:00 pm). Each exam will use an open book, open notes, open computer (but no communications, please) format. Both exams will likely be administered in an online format using Gradescope, to minimize the need for sharing paper, so the precise timing of exams will be more flexible than the preceding precise specification.

Attendance: **Attendance at the class meeting of April 3 is mandatory.** Teams for the final project will be formed in class on that day (see [project.pdf](#)). The participation grade will be based somewhat on your activity in the class lecture sessions, more on a participation score the GSI provides measuring your activity in the lab sections, and a bit on the presentation on April 17 or 22 (whether you participate both in presenting and from the audience).

Tentative Schedule

dates	topic or event
Jan 10, 17	introduction (chapter 2)
Jan 22	chapter 3
Jan 24, 29	chapter 4 (and a bit about Horvitz-Thompson)
Jan 31, Feb 5, 7	chapter 5
Feb 12, 14, 19, 21	chapter 6
Mar 4, 6, 11	chapter 8 (and some of Chapter 7)
Mar 18, 20, 25	chapter 9
Mar 27	chapter 7
Apr 1	EXAM
Apr 3	project work
Apr 8	chapters 5 and 11 and real-world surveys
Apr 10, 15	real-world surveys
Apr 17, 22	presentations
Apr 24, noon	final project paper due
April 30, 4:00pm–6:00 pm	final exam

Course Grades

assignment	weight
homework	25%
exam	20%
project	25%
final exam	25%
participation	5%

Supplemental reading: other items will be listed on slides and other handouts

- Thomas Lumley. 2010. *Complex Surveys: A Guide to Analysis Using R*. Wiley. Pages 2–10, 17–23, 39–45 (in file `TL_2-45.pdf`).
- Carl-Erik Särndal, Bengt Swensson and Jan Wretman. 1992. *Model Assisted Survey Sampling*. Springer-Verlag. Pages 36–57, 162–166, 172–181, 219–239, 556–563, 573–577 (in files `SSW_36-57.pdf`, `SSW_162-239.pdf` and `SSW_556-577.pdf`).
- R. R. Sitter. 1992. Comparing three bootstrap methods for survey data. *Canadian Journal of Statistics* 20(2): 135–154. In file `Sitter-ComparingThreeBootstrap-1992.pdf`.