

**STA 304H1 F/1003H F, SUMMER 2017**  
**SURVEYS, SAMPLING AND OBSERVATIONAL DATA**

**Time:** T 6-9, R 6-9, place MS 3154, web-site: on Portal.

**Instructor:** Dragan Banjevic (dragan.banjevic@utoronto.ca), office BA8139, tel: 946-3939, office hours: T, R 5-6.

**Textbook:** Scheaffer, Mendenhall, Ott: Elementary Survey Sampling (Seventh ed.).

**Useful but not required:** Lohr: Sampling: Design and Analysis.

**Marking scheme:** First test (20%, June 1, 6-7, place TBA), second test 20% (June 15, 6-7, place TBA) (tests are held in class time; class resumes after), final exam 60% (3h, in exam period, June 26-30). You will make your formula sheet (Test 1, one page, one side, Test 2, two pages, one-sided, final, three pages, one-sided; the formula sheet is cumulative, that is, every time you add one more page, and you cannot include any worked examples, only theoretical formulas). There are no make-up tests. With a U of T doctor's note your mark will be adjusted. If you miss the first test, the second test weight will be adjusted. If you miss the second test, the weight of the final will be adjusted (warning: difficulty increases from the first test to the final; final covers complete course).

**Tutorials:** There are no tutorials, but you can come for help to Stat. Aid Centre, SS1091, before tests: date and time TBA. Some extra office hours before the final will be available. Class slides and sample tests and finals will be posted on the web-site.

**It is strongly recommended to bring handouts to the class regularly.**

**Calculation:** No statistical software is required. Still, the course includes a lot of numerical calculation. You will need a basic scientific hand-calculator, with statistical functions, and experience in working with it (**start using it from the first day**). Inability to work with it will not be an excuse. Programmable calculators are not allowed on tests and final exam. Don't forget this.

**Course outline:** Almost all of the course material is covered by the textbook. Related to the basic level of the textbook, some theoretical results will be considered in more detail. The following is a tentative schedule for the course:

1. Sampling problems and notions (Ch 2), recommended exercises: 1-7, 28.
2. Basic concepts (Ch 3). Exercises: 2-8, 21.
3. Simple random sampling (Ch 4; 4.6 is not covered), exercises: 1, 2, 14-17, 18a, 20, 21, 23-28, 36, 38, 41, 42.
4. Stratified random sampling (Ch 5; 5.10, 5.11 are not covered), exercises: 1-3, 5-8, 12-17, 24, 26, 27.
5. Ratio, regression, and difference estimation (Ch 6; 6.5 is not covered), exercises: 1, 2, 6, 9, 16, 23, 26, 27.
6. Systematic sampling (Ch 7), exercises: 3, 4, 8, 21, 25, 27.
7. Cluster sampling (Ch 8; 8.8 is not covered), exercises: 2-5, 8, 9, 16, 17, 20, 24, 25, 26, 27.
8. Two-stage cluster sampling (Ch 9), exercises: 2-4, 6, 9, 10, 14-16.
9. Supplemental topics, nonsampling errors (Ch 11.1, 11.2, 11.4, 11.8 are covered), exercises: 1, 13, 14.