
University of Alberta
STAT 361 – Sampling Techniques
Section Q2 Winter 2024

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Web Page: An eClass has been created for STAT 361 (<https://eclass.srv.ualberta.ca/>)

Assignments, solutions for assignments and other course materials will be posted on this website.

Check this site for regular updates.

Office Hours: Monday 1:00 – 2:00 PM Wednesday, Friday 3:00 – 4:00 PM

Lecture Room & Time: BS M-149 MWF 2:00 – 2:50 PM

Teaching Assistants: See the course eClass page for information about TAs, office hours and contact.

COURSE CONTENT

Course Description: We will follow the textbook closely and will cover some sections of the Chapters 4, 5, 6, 7, 8 and 10. Chapter 9 will be covered if time permits.

Course Prerequisites: STAT 266 or STAT 276 or STAT 235. It is expected that students who are taking this course have acquired the knowledge of one of preceding courses, as this requirement will not be waived off.

Course Objectives and Expected Learning Outcomes: There will be 5 assignments. Completed assignments should be submitted using **Assign2** on eClass. When working on assigned homework problems, you are expected to read the corresponding sections of the text. Although the material in each assignment will usually be presented prior to the due date, it may sometimes be necessary to read ahead in order to complete the homework problems. Late assignments will not be accepted whatsoever. If a student misses an assignment and has a legitimate excuse (see below for details), then the weight of that assignment will be applied to the final exam. Assignments will be graded usually one week after the due date. Assignments and solutions for assignments will be posted on the STAT 361 eClass. You should work independently and write up your work in your own words.

Course Schedule & Assigned Readings:

Week	Dates	Topic	Readings
1	January 8-12	Introduction of Sampling problems	Chapter 2 and 3
2	January 15-19	Simple random sampling (part I)	Chapter 4.0 – 4.4
3	January 22-26	Simple random sampling (part II) + Stratified random sampling (part I)	Chapter 4.5 – 5.3
4	January 29-February 2	Stratified random sampling (part II)	Chapter 5.4 – 5.12
5	February 5-9	Ratio estimation method (part I)	Chapter 6.0 – 6.5
6	February 12-16	Ratio estimation method (part II) + review	Chapter 6.6 – 6.9
7	February 19-23	reading week	
8	February 26-March 1	Systematic Sampling (part I) + midterm exam	Chapter 7.0 – 7.3
9	March 4-8	Systematic Sampling (part II)	Chapter 7.4 – 7.8
10	March 11-15	Cluster Sampling (part I)	Chapter 8.0 – 8.6
11	March 18-22	Cluster Sampling (part II) + Population size estimation (part I)	Chapter 8.7 – 8.9 Chapter 10.0 – 10.3
12	March 25-29	Population size estimation (part II)	Chapter 10.4 – 10.8
13	April 1-5	Two-stage cluster sampling (part I)	Chapter 9.0 – 9.4
14	April 8-12	Two-stage cluster sampling (part II) + review	Chapter 9.5 – 9.8

LEARNING RESOURCES**Required Textbook and/or Other Major Course Materials:**

Elementary Survey Sampling (7th edition) by R.L. Scheaffer, W. Mendenhall III, R.L. Ott and K.G. Gerow

Publisher: Brooks/Cole (CENGAGE Learning).

It is recommended that you buy this book (at least an e-version).

Recommended or Optional Learning Resources:

Sampling: design and analysis (2nd edition) by Lohr, Sharon L. . CRC press, 2021.

Academic Success Centre:

The [Academic Success Centre](#) provides professional academic support to help students strengthen their academic skills and achieve their academic goals. Individual advising, appointments, and group workshops are available year round in the areas of Accessibility, Communication, Learning, and Writing Resources. Modest fees apply for some services.

GRADE EVALUATION

Your course grade will be based on assignments, a midterm exam (50 minutes) and the final exam (two hours). A standard scientific calculator will also be allowed for the exams. **The final exam is cumulative.** If a student misses a midterm exam and has a legitimate excuse (see below for details), then the weight of that exam will be applied to the final exam. The same rule will be applied on missed assignments. There will be no make-up midterm exams. Your grade will be decided as follows:

Assessment	Weight	Date
Assignments	20%	5 times
Midterm Exam	30%	March 1 (in class)
Final Exam	50%	April 17 (Wednesday) 9-11 am

Grading policy: I do not consider letter grades until all components (assignments, midterm exam and the final exam) have been collected. Your grade will be determined based on your overall score out of 100. Below is the tentative distribution that will be used to assign grades:

Score	< 44	45-47	48-51	52-55	56-59	60-64	65-70	71-76	77-82	83-88	89-94	95-100
Grade	F	D	D+	C-	C	C+	B-	B	B+	A-	A	A+

Grades are unofficial until approved by the Department and/or Faculty offering the course.

Re-examination:

A student who writes the final examination and fails the course may apply for a re-examination. Re-examinations are rarely granted in the Faculty of Science. Re-examinations are governed by [university-wide Academic Regulations](#) and [Faculty of Science Academic Regulations](#). Misrepresentation of Facts to gain a re-examination is a serious breach of the *Code of Student Behaviour*.

POLICIES FOR LATE AND MISSED WORK

Missed Term Work or Final Exam Due to Non-medical Protected Grounds (e.g., religious beliefs):

When a term assessment or final exam presents a conflict based on [non-medical protected grounds](#), students must apply to the Academic Success Centre for accommodations via their [Register for Accommodations website](#). Students can review their eligibility and choose the application process specific for *Accommodations Based on Non-medical Protected Grounds*.

It is imperative that students review the dates of all course assessments upon receipt of the course syllabus, and apply **AS SOON AS POSSIBLE** to ensure the timely application of the accommodation. Students who apply later in the term may experience unavoidable delays in the processing of the application, which can affect the accommodation.

Missed Term Work:

No late assignments or exams will be accepted whatsoever. Failure to complete assignments and exams on time for any reason will result in a mark of zero. A student who cannot complete assignments/exams due to incapacitating illness, severe domestic affliction or other compelling reasons (including missing an in-person assessment due to the requirement to self-isolate when experiencing COVID-19 symptoms or with a positive test result) can apply for an excused absence. To apply for an excused absence, you must contact the instructor within two working days of missing the assessment or as soon as possible. If an excused absence is granted, then the weight of that assignment/exam will be applied to the final exam. An excused absence is a privilege and not a right. There is no guarantee that an absence will be excused. Misrepresentation of facts to gain an excused absence is a serious breach of the Code of Student Behaviour. In all cases, instructors may request adequate documentation to substantiate the reason for the absence at their discretion.

Deferred Final Examination:

A student who cannot write the final examination due to incapacitating illness, severe domestic affliction or other compelling reasons can apply for a deferred final examination. Such an application must be made to the student's Faculty office within two working days of the missed examination and must be supported by appropriate documentation or a Statutory Declaration (see calendar on [Attendance](#)). Deferred examinations are a privilege and not a right; there is no guarantee that a deferred examination will be granted. The Faculty may deny deferral requests in

cases where less than 50% of term work has been completed. Misrepresentation of facts to gain a deferred examination is a serious breach of the Code of Student Behaviour.

STUDENT RESPONSIBILITIES

Academic Integrity and Student Conduct:

The University of Alberta is committed to the highest standards of academic integrity and honesty, as well as maintaining a learning environment that fosters the safety, security, and the inherent dignity of each member of the community, ensuring students conduct themselves accordingly. Students are expected to be familiar with the standards of academic honesty and appropriate student conduct, and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour and the Student Conduct Policy, and avoid any behaviour that could potentially result in suspicions of academic misconduct (e.g., cheating, plagiarism, misrepresentation of facts) and non-academic misconduct (e.g., discrimination, harassment, physical assault). Academic and non-academic misconduct are taken very seriously and can result in suspension or expulsion from the University.

All students are expected to consult the Academic Integrity website for clarification on the various academic offences. All forms of academic dishonesty are unacceptable at the University. Any suspected academic offence in this course will be reported to the College of Natural and Applied Sciences. Suspected cases of non-academic misconduct will be reported to the Dean of Students. The College, the Faculty of Science, and the Dean of Students are committed to student rights and responsibilities, and adhere to due process and administrative fairness, as outlined in the Code of Student Behaviour and the Student Conduct Policy. Anyone who is found in violation is likely to receive a sanction. Typical sanctions for academic misconduct include conduct probation, a mark reduction or a mark of 0 on an assessment, a grade reduction or a grade of F in a course, a remark on the transcript, and a recommendation for suspension or expulsion. Sanctions for non-academic misconduct include conduct conditions, fines, suspension of essential or non-essential University services and resources, and suspension or expulsion from the University.

Exam Conduct:

- Your student photo I.D. is required at exams to verify your identity.
- Students will not be allowed to begin an examination after it has been in progress for 30 minutes. Students must remain in the exam room until at least 30 minutes has elapsed.
- All cell phones must be turned off and stored in your bags.

Cell Phones:

Cell phones are to be turned off during lectures, labs and seminars.

Students Eligible for Accessibility-Related Accommodations:

In accordance with the University of Alberta's Discrimination, Harassment, and Duty to Accommodate policy, accommodation support is available to eligible students who encounter limitations or restrictions to their ability to perform the daily activities necessary to pursue studies at a post-secondary level due to medical conditions and/or non-medical protected grounds. Accommodations are coordinated through the Academic Success Centre, and students can learn more about eligibility on the Register for Accommodations website.

It is recommended that students apply as early as possible in order to ensure sufficient time to complete accommodation registration and coordination. Students are advised to review and adhere to published deadlines for accommodation approval and for specific accommodation requests (e.g., exam registration submission deadlines). Students who request accommodations less than a month in advance of the academic term for which they require accommodations may experience unavoidable delays or consequences in their academic programs, and may need to consider alternative academic schedules.

Recording and/or Distribution of Course Materials:

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Learning and Working Environment:

The Faculty of Science is committed to ensuring that all students, faculty and staff are able to work and study in an environment that is safe and free from discrimination and harassment. It does not tolerate behaviour that undermines that environment.

If you are experiencing harassment, discrimination, fraud, theft or any other issue and would like to get confidential advice, please contact any of these campus services:

- [Office of Safe Disclosure & Human Rights](#): *A safe, neutral and confidential space to disclose concerns about how the University of Alberta policies, procedures or ethical standards are being applied. They provide strategic advice and referral on matters such as discrimination, harassment, duty to accommodate and wrong-doings. Disclosures can be made in person or online using the [Online Reporting Tool](#).*
- [University of Alberta Protective Services](#): *Peace officers dedicated to ensuring the safety and security of U of A campuses and community. Staff or students can contact UAPS to make a report if they feel unsafe, threatened, or targeted on campus or by another member of the university community.*

- [Office of the Student Ombuds](#): *A confidential and free service that strives to ensure that university processes related to students operate as fairly as possible. They offer information, advice, and support to students, faculty, and staff as they deal with academic, discipline, interpersonal, and financial issues related to student programs.*
- [Office of the Dean of Students](#): *They can assist students in navigating services to ensure they receive appropriate and timely resources. For students who are unsure of the support they may need, are concerned about how to access services on campus, or feel like they may need interim support while you wait to access a service, the Dean of Students office is here to help.*

Feeling Stressed, Anxious, or Upset?

It's normal for us to have different mental health experiences throughout the year. Know that there are people who want to help. You can reach out to your friends and access a variety of supports available on and off campus at the [Need Help Now](#) webpage or by calling the 24-hour Distress Line: 780-482-4357 (HELP).

Student Self-Care Guide:

This [Self-Care Guide](#), originally designed by the Faculty of Native Studies, has broader application for use during students' learning. It provides some ideas and strategies to consider that can help navigate emotionally challenging or triggering material.

Policy about course outlines can be found in [Course Requirements, Evaluations Procedures and Grading](#) of the University Calendar.

Land Acknowledgement:

The University of Alberta respectfully acknowledges that we are situated on Treaty 6 territory, traditional lands of First Nations and Métis people.

To learn more about the significance of this land acknowledgement, please read [this](#) useful article and associated links to more information.

Disclaimer:

Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.