Stat 203 Statistical Methods

Winter Session 2024/25 Term 1

Course Description: Organizing, displaying and summarizing data. Inference based on elementary probability models including estimation and hypothesis testing. Faculty of Science credit will not be given. Credit will be given for only one of STAT 200 and STAT 203.

Objective: Determining the validity of a political, economic, legal or scientific argument calls for the weighing of evidence. Often this evidence consists of data. In this course, you will learn statistical methods for presenting and evaluating data. You will also develop ways of thinking critically about data collection and analysis.

Prerequisites: Mathematics 11

Course Website: **canvas.ubc.ca**

Please check the Canvas website regularly to keep up-to-date with the course.

Recommended Textbook (optional): De Veaux, R.D., Velleman, P.F., et al. (2022). Stats: Data and Models (Fourth Canadian edition). Toronto: Pearson Canada.

Tutorials: Tutorials start in the second week of class. During tutorial sessions, TAs will discuss practice problems, lead in-class or lab activities.

Computer use:
You will need a calculator that can do basic arithmetic. For activities conducted in the tutorials, we will use R and R Commander (a freeware). Detailed information regarding how to download and install the software can be found under the Tutorials module.

Teaching method:
We will adopt a partially flipped classroom teaching approach. There will be assigned reading which students are expected to complete before class. During lecture, the instructor will review concepts, deliver course material and use part of the lecture for in-class activities. Students will be working in groups and solving problems on topics recently covered during in-class activities. Clicker questions will be given along the way to check progress and provide feedback to students.

Clickers:

We will be using the iClicker Cloud in lectures. It is free for students. iClicker is a response system that allows you to respond to questions posed by instructors during class. You will need to create an iClicker account associated with UBC by **Sunday, Sep 9**. See here for details:

https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/

Piazza Discussion Board: This term, we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TAs, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Course Assessment:

Assessment	Date	Percentage
Clickers	In class (participation and performance)	4%
WeBWorK Homework	Weekly (please see Canvas for exact dates)	10%
Tutorials	Weekly (please see Canvas for exact dates)	8%
Written Assignments	Friday Oct 4 & Friday Nov 15 (at 11:59 PM PT)	8%
Midterm	Two in-person exams during lecture time on Friday Oct 18 & Friday Nov 22	30%
Final Exam (you must pass the final to pass the course)	To be scheduled by Classroom Services	40%

Topics to be covered:

Chapters 1-5: Exploring and understanding data (displays and summaries of categorical and quantitative data, normal model) [8 hours]
Chapters 6-8: Exploring relationships between variables, (scatterplots, correlation, regression) [4 hours]
Chapters 9-10: Gathering data (sample surveys, experiments) [4 hours]
Chapters 11, 12, 14: Randomness and probability, central limit theorem [7 hours]
Chapters 15-17: One sample inference for proportions [6 hours]
Chapter 18: Inference for means [4 hours]

If time allows: Chapters 19, 20, 24

Detailed learning outcomes can be found on the course website. Refer to this document throughout the course to clarify the outcomes you are expected to attain in each section of the material.

Policy regarding missing the midterm or final exam:

1. There will be no make-up exams.
2. Students who miss a midterm exam should notify the instructor prior to (if possible) or immediately after the midterm. Students must fill out a "Student Declaration of Academic Concession" form within one week of the day of the midterm.
3. Students who miss the final exam must report to their Faculty advising office within 72 hours of the missed exam and must supply supporting documentation. Only your Faculty Advising office can grant deferred standing in a course. You must also notify your instructor prior to (if possible) or immediately after the exam. Your instructor will let you know when you are expected to write your deferred exam. Deferred exams will only be provided to students who have applied for and received deferred standing from their Faculty.

Regrading

If you have concerns about the way your work was graded, please open a request **within one week** (unless otherwise specified) of having the grade returned to you. After the regrade deadline, we may deny your request for re-evaluation. Also, please keep in mind that your grade may go up or down as a result of re-grading.

Reach Out for Success

University students often encounter setbacks from time to time that can impact academic performance. Discuss your situation with your instructor or an academic advisor. Learn about how you can plan for success at www.students.ubc.ca. For help addressing mental or physical health concerns, including seeing a UBC counsellor or doctor, visit https://students.ubc.ca/health/wellness-centre.

Academic Integrity

All students are expected to follow UBC's Academic Honesty and Standards policy. We encourage students to work together on assignments and labs, however all of your work must be written in your own words. Students must correctly cite references if you quote or use outside sources in your work, including any AI tools. Breach of the academic integrity policy may, at a minimum, result in a grade of 0 on the relevant assessment or may result in more serious consequences. Please see UBC's Academic Calendar for detailed policies on Academic Misconduct.

Health and Safety

Please follow the current UBC COVID-19 Campus Rules regarding self-monitoring, and staying home if you are sick. Although masks are no longer required on campus, please respect the choices of your fellow students and the instructional team who may continue to wear masks.

I will do my best to stay well, but if I am ill, I will not come to class. If that happens, here's what you can expect:

- Another instructor will substitute.
- Class may take place over Zoom (in this case, Zoom link will be posted on Canvas). I will send any updates via Canvas Announcements as soon as I can.

Extreme Environmental Conditions Contingency Plan

In-person, on campus activities may need to be cancelled due to issues such as weather conditions (e.g., snow). The most up-to-date information about cancellations will be posted on ubc.ca. Please check ubc.ca often during times when an extreme weather event could disrupt our course activities. Here is what you can expect in the event an in-person lecture or lab session is cancelled:

- Depending on the nature of the planned in-class activities, class may take place over Zoom (in this case, Zoom link will be posted on Canvas), or an alternate activity may be posted on Canvas for you to complete before the next scheduled class. I will communicate over Canvas to announce the specifics for each case that arises as soon as I can.

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University Policies

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural

observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available at https://senate.ubc.ca/policies-resources-support-student-success.

Related academic policies:

- Academic Concession
- Academic Honesty and Standards
- Attendance
- Grading Practices
- Student Conduct and Discipline
- Viewing Marked Work