STAT 251 - Elementary Statistics

Winter Term 2 (January - April 2021)

Course Description: Probability, discrete and continuous random variables, probability distributions, estimation, hypothesis testing, analysis of variance, regression.

Prerequisites: One of MATH 101, 103, 105, 121, SCIE 001.

Instructor: Dr. W. A. Lasantha Premarathna (Email: wpremara@stat.ubc.ca). Please use the email only for personal matters that you would want to discuss with the instructor. Please use **office hours** and **Piazza Discussion Board** for questions regarding assignment problems/text book problems/labs class note examples etc.

Class Room: Classes moved to online
Scheduled class time: 8:00am-8:50am (Monday, Wednesday and Friday)
(time indicated in this syllabus is in Vancouver time. If you are in a different time zone, please adjust accordingly)

- **Monday & Wednesday Lectures:** I will do real time lectures on these two days. Please access the Zoom links those are found through the zoom tab (see the left side menu) in the Canvas page. Pre-readings also will be posted on Canvas page for some of the lectures.
- **Friday Lectures:** I will post pre-recoded lecture videos and class notes.

Instructor Office Hours: online office hours (Zoom links are found through the zoom tab)
- 8:00pm - 9:00pm on Monday
- I will be available for some time after the lectures on Mondays and Wednesdays

Head TA: Monica (Qian) Ye (email: qian.ye@stat.ubc.ca)

Teaching assistants & TA office hours: Online office hours will be held using Zoom. Zoom links are found through the zoom tab.

Course Website: **canvas.ubc.ca**
Please check the **Canvas** website regularly to keep up-to-date with the course. Everything you need will be available through Canvas and you should get familiar with all the tabs as soon as possible.
If you have any problems related to technical issues, please use **?Help** (see the left side menu in the Canvas course page) to report the problem or to contact IT service.
Textbook: Course notes (free, download from Canvas)
Additional references: Any recent editions "Probability and Statistics for Engineering and the Sciences" (by J.L. Devore)

COVID: Due to the COVID-19 pandemic the lectures and labs will be taking place online via zoom. The class will be synchronous with iClicker questions (not in all classes), but will be recorded for those that may not be able to attend. COVID is challenging for all of us, and some students are in different time zones. As such, we have designed different marking schemes that take into accounts that some students may not be able to attend some parts of the class. At the end of the term, the grade for each student will be calculated with the three schemes, and the best grade will be given to the student.

Course Assessment: Note: while we will use the scheme that provides each student with the best grade, we can only show one scheme on Canvas. The scheme displayed on canvas is scheme 1.

Assessment	**Date**	**Percentage**		
		Scheme 1	**Scheme 2**	**Scheme 3**
Class question (iClicker Cloud)		6%	3%	0%
Canvas quizzes (x7)	See the schedule	7%	9%	10%
WeBWork (x10)	See the schedule	10%	12%	13%
Labs (x8)	See the schedule	8%	8%	8%
Written Assignments (x2)	See the schedule	10%	10%	10%
Midterm	Wednesday, March 10 (During class time)	24%	18%	14%
Final Exam (must to pass the final exam to pass the course)	Online exam To be scheduled by Classroom Services. Exam schedule is released about 3 weeks before exams **Exam period:** April 18-29	35%	40%	45%

Bonus points**:** There will be opportunities for bonus points, e.g., points will be given to the top 15 students that provide the best answers on Piazza.

Policy regarding missing the midterm:
1. There will be no make-up exam
2. Students who miss an exam should notify the instructor prior to (if possible) or immediately after the exam. Students must supply a supporting document (for example, a doctor's note will be sufficient in case of a medical emergency) within one week of the day of exam.

Deferred Exam Policy if you miss the Final Exam:
The policy (UBC policy) is that students who miss the final exam MUST report to their faculty advising office within 72 hours to apply for deferred standing. They must also notify the instructor to receive instructions as to when they will write their deferred final. But they will not be granted a deferred final unless they are granted deferred standing by their faculty advising office.

iClicker cloud: We will be using iClicker Cloud in lectures. iClicker Cloud is a response system that allows you to use your own computer or mobile device to respond to questions posed by instructors during class, and you will be graded on your participation and performance. You need to set up an iClicker Cloudaccount and add STAT 251 as a course to this account. To do so, please follow https://lthub.ubc.ca/guides/iclicker-cloud-student-guide for details. For us to be able to assign you your participation grade, you must link your iClicker account to Canvas. To do so, click the iClicker sync button on Canvas and follow the instructions. We know COVID may cause many students to miss class due to illness, family issues, personal reasons, and internet connection problems. As such, we will exclude 4 iclicker sessions from your final grade. These will either be 4 missed classes or the 4 classes with your lowest grades. Also note that one of the grading schemes does not include iClicker grades to accommodate, as much as possible, students in other time zones. You do not need to contact the instructor if you miss class, these concessions will be made by default. Lectures will be recorded and available through the zoom→Cloud Recordings tab on Canvas.

Piazza Discussion Board:
You can use "Piazza Discussion Board" to post your questions. This is where you can discuss ideas, strategies, and resources for solving the problems with your classmates. Please DO NOT POST ANSWERS to the questions in the WeBWork assignments/written assignments and Labs before the due date. Instead, share your thoughts and approaches to solving the problems. Asking others how to solve a problem without first trying to solve it yourself will not be beneficial for your learning. TAs will not give the solution for assignments questions before the due date. But they will surely give hints as needed and let you know the correct directions. If you need more clarification, its always better to contact TAs or me during our office hours. Don't expect TAs will answer all your questions posted in Piazza page. We are holding lots of online office hours. I highly encourage you to use online office hours. TAs are available on Zoom. Please go to "General Information: Labs" under "Labs" or "TA Office Hours (online)" to see when TAs are available during each day from Monday to Friday. If you have any problems or feedback for the developers, email team@piazza.com.
The 15 students that have answered the most statistics-related questions in a way that explains concepts well but does not reveal the answer to an assignment, lab, or webwork question will get a bonus 1% added to their grade.

Access Piazza: Please go to **"Piazza"** in the left menu in the Canvas course page and it will open in a new window. Then you can sign up for the class page.

WeBWork:
I will let you know when it is available to you all. WeBWorks start the second week of class. I will post canvas announcements when WeBWorks assignments are posted.

Access WeBWork: Please go to **"WeBWork"** in the left menu in the Canvas course page.

Labs: Lab assignments start the second week of class. Lab materials will be posted on Canvas course page and you need to submit individual lab handout to Crowdmark. You will have at least 5 days to submit your solutions to Crowdmark. Please read more information about lab under "Labs" in Canvas course page.

Crowdmark: Crowdmark is an online grading and analytics application. You need to submit (upload) your answers to assignments/labs in Crowdmark. Graded assignments will also be available one week after the due date. I will provide Crowdmark link when assignments are posted. You also will receive an email when a Crowdmark assignment available. If you cannot see STAT 251 course in Crowdmark, you are probably using the wrong email address. Then try with your other emails. The correct email will show you the STAT 251 course. If you still have problems, please contact lt.hub@ubc.ca . Do not use multiple email addresses to access Crowdmark. If you use multiple emails, your grade will not be correctly sync with the Canvas grade book. **Access Crowdmark:** you can see where to upload your assignment when they are ready. You will be able to access Crowdmark only when the first assignment (lab or written assignment) is available there.

Academic Integrity: Class Policies on Exams and Assignments

Exams:

- The exams are open book (details will be provided later).
- Students are not permitted to communicate with any individuals for assistance either in person, online, via telephone, social media, or any other mode of communication during exams. And also questions, part questions, or attempted solutions must not be shared by any student. Failure to comply with these rules will result in an automatic 0 for this exam, and additional serious academic penalties.

Assignments/Canvas quizzes/WeBWork/Labs:

- Discussion of ideas leaned in class is encourage (with other students, TAs or the instructor). This helps the leaning process. But individual work turned in by each student should be your own work. Do not copy or paraphrase solutions from other students or from other sources. Do Not provide your solutions to another student. Failure to comply with these rules will result in an automatic 0 for your work, and additional academic penalties.

For more information, please see

Academic Honesty and Standards:

http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,958

Academic Misconduct:

http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,959

Disciplinary Measures:

http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,960

Chapters to be covered*:* 1, 2, 3, 4, 5, 6, 7, 8, 10, & 11
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 for each section of the material.

Brief Course Description

- Descriptive Statistics (Ch. 1)
- Probability and probability models (Ch. 3)
- Random variables and distributions (Ch. 4-6)
- Central Limit Theorem (Ch. 7)
- Statistical estimation and hypothesis testing (Ch. 8)
- Analysis of variance (Ch. 10)
- Selected topics from regression (Ch. 2 & 11)

Statement regarding online learning for international students
The Provost's office has developed the following statement pertaining to the potential restrictions to international students' online learning experiences as a result of remote learning:

During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0 for an articulation

of the values of the University conveyed in the Senate Statement on Academic Freedom). Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: http://academic.ubc.ca/support-resources/freedom-expression

Note:

- Please check the Canvas course page regularly.
- No late submission (WeBWork/Written Assignments/Labs/Exams/Canvas Quizzes) will be accepted.
- You are allowed to discuss lab assignment/WeBWork/ Written Assignment questions with other students via Piazza discussion board. But DO NOT post answers in the Piazza page.
- Grades change request forms (for midterm and assignments) should be submitted within one weeks after grade released/post solution on canvas page. Remarking request should only be raised when you are sure that the markers have made a mistake in marking your paper when you compare your paper with marking scheme. Remarking is not meant to give students a way to ask for more marks
- I will not be able to answer your questions about assignment problems/text book problems/ class note examples etc. by emails. I hope you can understand that as there are 400 students in the class and how hard to explain answers to your questions through emails. Please use **online office hours** and **Piazza Discussions** for those kind of questions**.** Please use the instructor email only for personal matters (eg. if you are going to miss the midterm exam/lab due to some unavoidable circumstance etc. or some other important matter related to the course) that you would want to discuss with the instructor. We are always there to help you guys during our (TAs and mine) online office hours.
- Zoom is used for midterm and final exam invigilation. If you don't have a webcam on your computer, you can use your phone/ipad/tab for the zoom invigilation.

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

Schedule: This is a **tentative** lecture schedule and may be subject to change. Any updates will be

announced in class and/or posted on Canvas page

Week	Dates	Lectures	WeBWork	Labs	Quiz
1	Jan 11 – Jan 15	Ch 1	No WW	No Lab	
2	Jan 18 – Jan 22	Ch 1, 3	No WW	No Lab	
3	Jan 25 – Jan 29	Ch 3, 4	WW 1	Lab 1	Quiz 1
4	Feb 1 – Feb 5	Ch 4	WW 2	Lab 2	Quiz 2
5	Feb 8 – Feb 12	Ch 5, 6	WW 3	Lab 3	Quiz 3
	Feb 15 – Feb 19	Mid-term Break	No WW	No Lab	
6	Feb 22 – Feb 26	Ch 6 **Written Assignment 1 due on Feb 25**	WW 4	No Labs	
7	Mar 1 – Mar 5	Ch 6,7	WW 5	Lab 4	Quiz 4
8	Mar 8 – Mar 12	Ch 7 **Midterm** **Wednesday, March 10**	NO WW	No Lab	
9	Mar 15 – Mar 19	Ch 7, 8	WW 6	Lab 5	Quiz 5
10	Mar 22 – Mar 26	Ch 8	WW 7	Lab 6	
11	Mar 29 – Apr 2	Ch 8, 10 **Written Assignment 2 due on Apr 1**	WW 8	Lab 7	Quiz 6
12	Apr 5 – Apr 9	Ch 10,2,11	WW 9	Lab 8	Quiz 7
13	Apr 12 – Apr 14	Ch 11	WW 10		
	April 18-29	Final Exam Period			