STA221H1 The Practice of Statistics II (LEC0101)
Winter 2023

Instructor: Jessie Yeung
Course Email: sta221@utoronto.ca
Instructor Email: jessie.yeung@mail.utoronto.ca (Only use for matters unrelated to the course)
Lecture Schedule: Tues. 3:00-5:00PM at WI 1017 and Thurs. 3:00-4:00PM at PB B250
Tutorial Schedule: Thurs. 4:00-5:00PM in Various Rooms
Instructor Office Hours: Tuesday 5:00-6:00PM at SS 592
TA Office Hours: TA office hours will be posted on Quercus

Course Description
Continuation of STA220H1 (or similar course); emphasizing major methods of data analysis such as analysis of variance for one factor and multiple factor designs, regression models, categorical and non-parametric methods.

Prerequisite
One of: STA220H1/STA288H1/PSY201H1/GGR270H1/EEB225H1/STAB22H3/STA220H5

Please note that all prerequisites for all STA courses are strictly enforced and your instructor cannot waive them. Any questions about prerequisites should be directed to ug.statistics@utoronto.ca.

Quercus Homepage
Our course homepage is located on Quercus (https://q.utoronto.ca/courses/296611). This is where you will find the most up-to-date information about the course such as announcements, lecture material, assessment information, grades, etc.

Email Communication
We will be using sta221@utoronto.ca for emails regarding course administration. This includes reporting missed assessments, re-mark requests, extension requests, etc. Please note that this email will not be monitored after the end of the term and such emails may be received by another instructor thereafter.

Textbooks & Resources
We will be using *Stats: Data and Models, 4th Canadian Edition* by De Veaux et al. (ISBN: 9780135761489). Homework problems will be assigned out of this textbook. Electronic copies can be purchased on the UofT Bookstore website.

Lectures and Tutorials
This class will meet every Tuesday from 3:00-5:00PM at WI 1017 and every Thursday from 3:00-4:00PM at PB B250.

Tutorials will take place bi-weekly on Thursday 4:00-5:00PM starting January 19th. Tutorial dates are Jan.19, Feb. 2, Feb. 16, Mar. 9, Mar. 23 and Apr. 6. Check your timetable for your tutorial location as there are three different tutorial sections (HA 401, MS 2173, or MS 3278). The purpose of the tutorials is to further reinforce course content through examples in R.

Course Assessments

Assessment	**Weight**	**Due Date**
Weekly Quizzes (Online through Quercus)	10% (Best 9 out of 11)	Weekly quizzes will be due each week on Sunday at 11:59PM from January 15 to April 2. There will not be a quiz due on Feb. 19.
Term Test (In-Class)	30%	Tues. February 28 at 3:10-5:00 PM

Problem Set Assignment (Submitted on Crowdmark)	15%	Thurs. March 16 at 11:59PM
Final Exam	45%	To be scheduled by the Faculty

Weekly Quizzes
There will be weekly quizzes available through Quercus. Each quiz will be open for a 72h period and each quiz will be due on Sundays at 11:59PM. The first quiz will end on January 15th and the last quiz will end on April 2nd. There will not be a quiz due on February 19 due to Reading Week, for a total of 11 quizzes.

Each quiz may consist of multiple choice, T/F, or calculation questions. Within the 72h window for each quiz, you will have 1 hour to complete it.

You will have one attempt for each quiz. The best 9 out of 11 quiz scores will count towards your grade.

Term Test
There will be one term test during the course which will take place on February 28th, at 3:10-5:00PM. This test will take place in-class, in the usual lecture hall.

The term test is a timed assessment. By enrolling in this offering of STA221, you are affirming that you are available during the test time slot.

Assignments
There will be one assignment during this course which will be in the form of problem sets. You should expect the assignment to involve calculations, problem solving questions, coding in R and/or written communication. The assignment will be due on March 16 at 11:59PM and to be submitted through Crowdmark.

Late submissions will not be accepted. If there are extenuating circumstances preventing you from submitting the assignment by the due date, you must email the instructor BEFORE the deadline for the possibility of alternative arrangements.

Final Exam
There will be a 3-hour cumulative final exam at the end of the course. The date and time of the final exam will be determined by the Faculty later on in the term.

Course Topics
Below is a tentative list of topics to be covered in this course. This content roughly corresponds to Chapters 7, 8, 22-28 in the textbook. The instructor reserves the right to modify this list as needed due to time constraints.

Week	Content	Textbook
1	Course Introduction Review of relevant STA220 topics	
2	Comparting Counts & Chi-Square Tests (Part 1)	Chapter 22
3	Comparting Counts & Chi-Square Tests (Part 2)	Chapter 22
4	Simple Linear Regression (Part 1)	Chapter 7/8, 23.1
5	Simple Linear Regression (Part 2)	Chapter 7/8, 23.2-6
6	Multiple Linear Regression (Part 1)	Chapter 26.1-5
READING WEEK		
7	Term Test Multiple Linear Regression (Part 2)	Chapter 27.2

8	Multiple Linear Regression (Part 3)	Chapter 27.1,3-4
9	ANOVA (Part 1)	Chapter 10.3-5, 24.1-3
10	ANOVA (Part 2)	Chapter 24.4-5, 25.1-2
11	ANOVA (Part 3)	Chapter 25.3, 28.1-2
12	Non-parametric tests	Chapter 28.3-5

Missed Assessments & Extensions
See below for a more detailed explanation for the policy regarding missed assessments and extensions for each assessment.

- *Missed Quizzes*: Quizzes that are not submitted during the availability window will receive a grade of 0. No extensions will be granted for quizzes under any circumstances. However, the lowest 2 quiz grades will be dropped.

- *Missed Problem-Set Assignment*: If the assignment is not submitted by the due date, it will receive a grade of 0. If there are extenuating circumstances preventing you from submitting the assignment by the due date, you must email the instructor **BEFORE** the deadline for the **possibility** of alternative arrangements.

- *Missed Term Tests*: If the test is missed due to an illness or personal emergency, you must contact the instructor via the course email within one week of the missed test. Your email must:
    1. be received within one week of the test date,
    2. must include 'STA221 Reporting Test Absence' in the subject line,
    3. must include your full name and student number,
    4. must include a screenshot/photo of your self-declared absence on Acorn, and
    5. must include the following two sentences:

    > *"I affirm that I am experiencing an illness or personal emergency and I understand that to falsely claim so is an offence under the Code of Behaviour on Academic Matters. I understand that an alternative assessment or alternative weighting scheme will be arranged at the instructor's discretion."*

    Students who properly follow all the steps outlined above will have the weight of the term test transferred to the final exam.

- *Missed Final Exam*: If you are not able to write your final exam at the scheduled time or if you miss a final exam for reasons outside your control, you may submit a deferred exam petition, which is a request to write your exam at a later time.

    Please see the Faculty of Arts and Science Deferred Exam policy for more information.

Remark Requests
Mistakes occasionally happen when marking. If you feel there is an issue with the marking of the term test or assignment, you may request that it be re-marked. The course re-mark policy exists to correct mistakes, and any request should clearly identify the error (for example, a question that was not marked, or a total incorrectly calculated). Requests to correct such mistakes must be sent by email to sta221@utoronto.ca. For consideration, any email for a re-mark request:

- must **not** be sent within the first 24 hours of the release of the assessment grade,

- must be received within two weeks of the date that the marks for the assessment became available,
- must include 'STA221 Regrade Request [Assessment Name]' in the subject line of the email,
- must include your full name and student number, and
- must give a specific, clear, and concise reason for each request, referring to a possible error or omission by the marker. Re-mark requests without a specific reason will not be accepted.

Please note that your entire test/assignment may be re-marked when submitting a remarking request. It is possible that a remark request will result in a lower mark. For the final exam, the re-mark process will be handled by the Department of Statistical Sciences.

Etiquette
When communicating with anyone in any way – but especially via email – make sure you courteous and respectful. This means using full sentences, not slang like "yo prof, I wanna get the lecture notes" (a real email received by a fellow instructor), etc. This is good practice for your eventual transition into industry or grad school. Make us want to reply to you. Importantly, *we reserve the right to simply ignore any emails that don't follow these guidelines*. If you email me or anyone, here are some general guidelines.

- Use a subject line that includes "STA221" along with a few words describing the topic of your email
- Start the email with "Hi Jessie, ..." – or with "Jessie" replaced by whomever you're emailing
- End the email with a "Thank you", "Regards", or something that indicates that the email is over
- Include your full name and UofT Student Number in the email
- Always send UofT related emails from your utoronto account (emails from personal emails may end up in the Junk folder)
- Allow for at least 24 hours before sending follow-up emails.

Computing
An introduction to programming the R statistical software is a learning objective of this course. There are 2 main options for accessing R.

1. You need to first install R, and then R Studio, both of which are freely available. R can be downloaded for free from http://cran.r-project.org. R Studio can be downloaded for free from https://posit.co/download/rstudio-desktop/.

2. Alternatively, you can also use R Studio through the U of T Jupyterhub available here: https://jupyter.utoronto.ca. After logging in, select New > R Studio.

Course Materials
All course materials are copyrighted. If they are from the textbook, the copyright belongs to the textbook publisher. If they are provided by an instructor (for example, lecture notes, computer code, assignments, tests, solutions) the copyright belongs to the instructor. Distributing materials online or sharing them with anyone in any way is a copyright violation and, in some situations, an academic offence.

Accessibility Needs
The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom, or course materials, please contact Accessibility Services as soon as possible: accessibility.services@utoronto.ca or https://studentlife.utoronto.ca/task/register-with-accessibility-services/.

Academic Integrity
Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the University of Toronto degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. Familiarize yourself with the University of Toronto's Code of Behaviour on Academic Matters available at http://academicintegrity.utoronto.ca.

Discussion about lecture materials, textbook concepts and course concepts with your classmates and the teaching team is encouraged, but **it is expected that you work independently on all assessments**. Please note, you may not submit for credit any work that was completed by someone else. This includes, but is not limited to, partially or fully completed code, written answers, answers to problems, communication of solutions, and plagiarism. In particular, you are expected to complete and submit independent work for all quizzes, assignments, tests, and exams. You may discuss lecture materials and general course concepts, but it is expected that you work individually and independently through all STA221 assessments. You may use code provided by your STA221 instructors or TAs without providing a citation. If you use code from any other source, you must provide the source. To protect yourself from potential academic integrity offences, do not share your code and written submissions anywhere (including on social media sites). Discussion or sharing of test questions and/or solutions with others during (or after) the tests is not permitted.

Academic offenses will be taken very seriously and dealt with accordingly. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact your instructor via email or by visiting office hours.