

**STA221H1 The Practice of Statistics II (LEC0101)
Winter 2024**

Instructor: Jessie Yeung

Email: sta221@utoronto.ca

Lecture Schedule: Tues. 3:00-5:00PM and Thurs. 3:00-4:00PM (See Acorn for room information)

Tutorial Schedule: Thurs. 4:00-5:00PM (See Acorn for room information)

Instructor and TA Office Hours: See 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/337443>). 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 and every Thursday from 3:00-4:00PM.

Tutorials will take place weekly on Thursday 4:00-5:00PM starting January 18th. Check your timetable for your tutorial location as there are three different tutorial sections. The purpose of the tutorials is to further reinforce course content through examples in R.

Course Schedule

Below is a tentative schedule 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 (Starting Date)	Content	Textbook	Notes
Week 1 (Jan. 9)	Course Introduction Review of relevant STA220 topics		Quiz Due Sun. Jan. 14 at 11:59pm
Week 2 (Jan. 16)	Compartmenting Counts & Chi-Square Tests (Part 1)	Chapter 22	Quiz Due Sun. Jan. 21 at 11:59pm
Week 3 (Jan. 23)	Compartmenting Counts & Chi-Square Tests (Part 2)	Chapter 22	Quiz Due Sun. Jan. 28 at 11:59pm

Week 4 (Jan. 30)	Simple Linear Regression (Part 1)	Chapter 7/8, 23.1	Quiz Due Sun. Feb. 4 at 11:59pm
Week 5 (Feb. 6)	Simple Linear Regression (Part 2)	Chapter 7/8, 23.2-6	Quiz Due Sun. Feb. 11 at 11:59pm
Week 6 (Feb. 13)	Term Test Multiple Linear Regression (Part 1)	Chapter 26.1-2	Term Test on during class time on Tues. Feb. 13 (Location TBA) No quiz this week.
READING WEEK			
Week 7 (Feb. 27)	Multiple Linear Regression (Part 2)	Chapter 26.3-5 Chapter 27.2	Quiz Due Sun. Mar. 3 at 11:59pm
Week 8 (Mar. 5)	Multiple Linear Regression (Part 3)	Chapter 27.1,3-4	Quiz Due Sun. Mar. 10 at 11:59pm
Week 9 (Mar. 12)	ANOVA (Part 1)	Chapter 10.3-5, 24.1-3	Assignment due Mar. 17 at 11:59PM Quiz Due Sun. Mar. 17 at 11:59pm
Week 10 (Mar. 19)	ANOVA (Part 2)	Chapter 24.4-5, 25.1-2	Quiz Due Sun. Mar. 24 at 11:59pm
Week 11 (Mar. 26)	ANOVA (Part 3)	Chapter 25.3, 28.1-2	Quiz Due Tues. Apr. 2 at 11:59pm
Week 12 (Apr. 2)	Non-parametric tests	Chapter 28.3-5	No quiz this week.

Course Assessments

Assessment	Weight	Due Date
Weekly Quizzes (Online through Quercus)	15% (Best 8 out of 10)	Weekly quizzes will be due each week on Sunday at 11:59PM starting on January 14. There will be no quiz due on February 18 or February 25. The last quiz will be due on Tues. April 2 nd (moved from Sunday due to long weekend).
In-Class Term Test	25%	Tues. Feb. 13 during class time (Location TBA)
Assignment	20%	Sun. March 17 at 11:59PM

Final Exam	40%	To be scheduled by the Faculty

Weekly Quizzes

There will be 10 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 14th. The last quiz will be due on Tuesday, April 2nd to avoid the long weekend.

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 8 out of 10 quiz scores will count towards your grade.

The use of course materials and R is permitted during weekly quizzes. Online resources or collaboration with others are not permitted.

Term Test

There will be one term test during the course which will take place on February 13th, at 3:10-5:00PM. This test will take place during class time.

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.

The following aids are permitted during the term test:

1. **Study notes** (ONE single-sided 8.5x11 inch sheet of notes)
2. **Calculator** (see below for calculator policy)

Assignments

There will be one assignment throughout the term. You should expect the assignment to involve calculations, problem solving questions, coding in R and/or written communication. The assignment is due on Sunday, March. 17 at 11:59p.m. The assignment is to be submitted through Crowdmark.

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.

The final exam is closed-book and the only aid allowed is a calculator and ONE double-sided 8.5x11 inch sheet of notes. All notes brought into the exam will be collected and not returned to students.

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 Term Tests*: If the test is missed due to an illness or personal emergency please fill out the following form within one week of the missed assessment: <https://forms.office.com/r/EcJBPrnmLH>

The form will ask you to upload the appropriate documentation, which is one of the following: Acorn absence declaration, Verification of Illness form, Letter from College Registrar, Letter of Academic Accommodation from Accessibility Services.

Students who properly fill out the form will receive an email to confirm that the weight of the missed test will be transferred to the final exam.

- ***Missed Assignments:*** If the assignment is not submitted by the due date, it will be subject to a late penalty of 20% per day. **No extensions will be provided for the assignment.**

Alternatively, if the assignment is missed due to an illness or personal emergency please fill out the following form within one week of the missed assessment: <https://forms.office.com/r/EcJBPrnmLH>

The form will ask you to upload the appropriate documentation, which is one of the following: Acorn absence declaration, Verification of Illness form, Letter from College Registrar, Letter of Academic Accommodation from Accessibility Services.

Students who properly fill out the form will receive an email to confirm that the weight of the missed assignment will be 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.

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://r.datatools.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.

Policy on Generative AI

Students may not use artificial intelligence tools for taking tests, writing assignments, creating computer code, or completing any other course assessments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding.