

**STA221H1 The Practice of Statistics II (LEC0101)  
Winter 2022**

**Instructor:** Jessie Yeung

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**Lecture Schedule:** Mon. 3:00-5:00PM and Wed. 3:00-4:00PM

**Tutorial Schedule:** Wed 4:00-5:00PM

**Instructor Office Hours:** Thurs. 12:00-1:00pm or by appointment

**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](mailto:ug.statistics@utoronto.ca).

**Quercus Homepage**

Our course homepage is located on Quercus (<https://q.utoronto.ca/courses/253090>). 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](mailto: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, 4<sup>th</sup> Canadian Edition* by De Veaux et al. (ISBN: 9780135761489). Homework problems will be assigned out of this textbook.

You can purchase an electronic version of this book through the UofT Bookstore using [this link](#).

**Course Format**

This class will meet every Monday from 3:00-5:00PM and every Wednesday from 3:00-4:00PM.

This course was originally scheduled as an in-person course. However, at the time of writing, all in-person activities will not begin until Monday, January 31, 2022. As we expect to switch between delivery modes, the table below indicates the format of our course under each scenario.

<b>Online Delivery</b>	<b>In-Person Delivery</b>
Lectures will take place on <a href="#">Zoom</a> .	Lectures may take place partially in-person at SS 2102 and partially on <a href="#">Zoom</a> . An official plan will be released at that time.
Tutorials will be held online on Zoom. (Please see the Quercus homepage for the TA's Zoom link, as it will change throughout the term.)	Tutorials will be held online on Zoom. (Please see the Quercus homepage for the TA's Zoom link, as it will change throughout the term.)
Instructor office hours will take place on <a href="#">Zoom</a> .	Instructor office hours will take place on <a href="#">Zoom</a> .

TA office hours will take place virtually. See Quercus for additional information.	TA office hours will take place virtually. See Quercus for additional information.
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### Lectures and Tutorials

Lectures will be held either online synchronously or in-person on Monday from 3:00-5:00PM and Wednesday from 3:00-4:00PM. Lectures will **not** be recorded.

Tutorials will be held online synchronously (i.e. live) on Wednesday from 4:00-5:00PM. Each tutorial will be run by a TA. They will cover some textbook problems and run through examples in R. Tutorials will **not** be recorded.

### Course Assessments

Assessment	Weight	Due Date
Weekly Quizzes (Online through Quercus)	15% (Best 9 out of 11)	Weekly quizzes will be due each week on Sunday at 11:59PM from January 16 to April 3.  There will not be a quiz due on Feb. 20.
Term Test (Online through Quercus)	30%	Mon. February 28 at 3:10-5:00 PM
Problem Set Assignment	15%	Wed. March 16 at 11:59PM
Final Exam (In-person)	40%	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 16<sup>th</sup> and the last quiz will end on April 3<sup>rd</sup>. There will not be a quiz due on February 20 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.

### 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.

### Term Test

There will be one term test during the course which will take place on February 28<sup>th</sup>, at 3:10-5:00PM. This test will take place online. You will be required to write out or type your solutions, and upload files onto Crowdmark by 5:00PM.

**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.**

In the case that your submission is late, there will be a 2% penalty for every minute that you are late. This means that 2% of the test score will be deducted for each minute that you are late. For example, there will be a 2% penalty for submissions submitted at 5:01PM, a 4% penalty for submissions submitted at 5:02PM, and so on. At 5:15PM, submissions will no longer be accepted and submission received at this time or later will receive a grade of 0.

**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.

<b>Week</b>	<b>Content</b>	<b>Textbook</b>
1	Course Introduction Review of relevant STA220 topics Intro to R	
2	Comparing Counts & Chi-Square Tests	Chapter 22
3	Simple Linear Regression (Part 1)	Chapter 7/8, 23.1
4	Simple Linear Regression (Part 2)	Chapter 7/8, 23.2-6
5	Multiple Linear Regression (Part 1)	Chapter 26.1-3
6	Multiple Linear Regression (Part 2)	Chapter 26.4-5
READING WEEK		
7	Term Test Multiple Linear Regression (Part 3)	Chapter 27.2
8	Multiple Linear Regression (Part 4)	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 term test is missed due to an illness or personal emergency, you must complete the following steps within 1 week of the missed assessment:
  1. Complete the Absence Declaration on Acorn to affirm that you have missed the term test due to an illness or personal emergency.
  2. Complete the [Missed Assessment Form](#). This form is only to be used for missed term tests, and not to be used for missed quizzes, assignments, or final exams.

Students who properly follow all the steps outlined above will have the weight of the term test distributed equally among all other assessments.

- **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](mailto: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.

### **Discussion Board**

To avoid repeated questions about the course concepts, we will be using discussion boards on Quercus. Please use the discussion board to ask any questions that are not specific to you. For example, if you are stuck on a homework question or have a question about a lecture slide, you should post on the discussion board.

If you have an inquiry that is *specific to your situation*, you should contact the instructor using the course email ([sta221@utoronto.ca](mailto:sta221@utoronto.ca)).

### **Etiquette**

When communicating with anyone in any way – but especially via email – make sure you are 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 <http://www.rstudio.com/products/rstudio/download/>.
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.

### Class Recordings

Lectures and tutorials for this course will **not** be recorded, regardless of whether lectures take place on Zoom or in person. This course is officially listed as an in-person format, which means there is a presumption that students will be available to attend class during the specified lecture times.

### Minimum Technical Requirements

All students should consult the minimum technical requirements for participation in online learning. If you are facing financial barriers to obtaining the required technology, please contact your College Registrar's Office to obtain information regarding your potential eligibility for a need-based bursary. If you anticipate having difficulty connecting to University websites (e.g., Quercus), please submit your question here: <https://www.utoronto.ca/covid19-contact>.

### 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](mailto:accessibility.services@utoronto.ca) or <http://www.accessibility.utoronto.ca>.

### 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.

### **COVID-19 & Mental Health Resources**

This iteration for STA221 will be running during the COVID-19 pandemic. There may be times where extensions for students are needed, and/or instructors and TAs may take longer than usual to respond to emails and/or marking needs. It is recommended to please stay active in the course as much as possible (attend lectures, visit office hours, etc.). If you are experiencing exceptional circumstances that will affect your performance in the course in the long term, it is your responsibility to contact your college registrar and the STA221 teaching team as early as possible.

The Faculty of Arts and Science have put together the following list of Frequently Asked Questions (FAQs) regarding COVID-19: <https://www.artsci.utoronto.ca/covid19-artsci-student-faqs>.

Additionally, learning online can be more challenging than learning in-person. If you need help regarding mental health, please do not hesitate to find support. Here are some UofT mental health resources:

- <https://prod.virtualagent.utoronto.ca/>.
- <https://studentlife.utoronto.ca/department/health-wellness/>.