STA220H1 The Practice of Statistics I (LEC5101)
Winter 2024

Instructor: Jessie Yeung
Head TA: Gracia Dong
Email: sta220@utoronto.ca (Emails will be answered by Head TA or forwarded to instructor)
Lecture Schedule: Tues. 6:00PM-9:00PM on Zoom
Instructor and TA Office Hours: See Quercus

Course Description
An introductory course in statistical concepts and methods, emphasizing exploratory data analysis for univariate and bivariate data, sampling and experimental designs, basic probability models, estimation and tests of hypothesis in one-sample and comparative two-sample studies. A statistical computing package is used but no prior computing experience is assumed. Note: STA220H1 does not count as a distribution requirement course.

Prerequisite
None

Quercus Homepage
Our course homepage is located on Quercus (https://q.utoronto.ca/courses/337422). 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
Please email Head TA Gracia Dong at sta220@utoronto.ca for inquiries related to course administration (administrative inquiries, remark requests, accessibility accommodations during assessments, TA office hours, etc.). All email inquires that warrant input or a response from the instructor will be forwarded appropriately.

For all email communication, students should expect a reply withing 24-48 hours (excluding weekends and university holidays).

Piazza
We will be using Piazza as the platform for discussions related to the course material and assessments. You can find our course page at https://piazza.com/utoronto.ca/winter2024/sta220lec5101. Students can post anonymously to classmates on Piazza, but the identity of the author of all posts is viewable by instructors and TAs.

All posts and conduct on Piazza must remain professional. Posts regarding personal matters such as inquiries about grades, absences, regrade requests, etc. should be communicated via email (at sta220@utoronto.ca) and **NOT** be posted on Piazza. Piazza is intended for students to receive support regarding course information and content and thus should be an overall positive and professional environment. Postings that do not align with this environment will be removed.

Textbooks & Resources
There is no required course textbook.

The following is a list of recommended supplementary material:

1. Online Modules: https://courses.utstat.utoronto.ca/STA220/index.html
   - This website features video lectures created for past iterations of STA220.

2. OpenIntro Statistics 4th Ed. By Diez, D. Barr, C.D., & Cetinkaya-Rundel M.
   - Free and available to download here: https://leanpub.com/os
   - This is an excellent textbook that is less conversational but contains clearly explained concepts. A nice feature of the text and website is that many of the examples and vignettes used to illustrate the concepts are based on real applications of statistics.

3. Stats: Data and Models, 4th Canadian edition, by Richard D. De Veaux, Paul F. Velleman, David E. Bock, Augustin M. Vukov, and Augustine C.M. Wong. 4th ed.
    - This textbook is available at the University of Toronto bookstore. It is written in a conversational style. Most concepts are clearly explained and there are lots of fun and interesting vignettes that illustrate statistical concepts.

Course Schedule

Week (Date)	**Topic**	**Notes**
Week 1 (Jan. 9)	Course Introduction, Summarizing Data	Quiz Due Sun. Jan. 14 at 11:59pm
Week 2 (Jan. 16)	Probability: Events	Quiz Due Sun. Jan. 21 at 11:59pm
Week 3 (Jan. 23)	Probability: Random Variables	Quiz Due Sun. Jan. 28 at 11:59pm
Week 4 (Jan. 30)	Sampling Distributions	Quiz Due Sun. Feb. 4 at 11:59pm
Week 5 (Feb. 6)	Data Collection	Quiz Due Sun. Feb. 11 at 11:59pm
Week 6 (Feb. 13)	In-person Term Test	Term Test on during class time on Tues. Feb. 13 (Location on campus TBA) No quiz this week.
Reading Week		
Week 7 (Feb. 27)	Confidence Intervals: Part 1	Quiz Due Sun. Mar. 3 at 11:59pm
Week 8 (Mar. 5)	Confidence Intervals: Part 2	Quiz Due Sun. Mar. 10 at 11:59pm
Week 9 (Mar. 12)	The Process of Statistical Tests	Quiz Due Sun. Mar. 17 at 11:59pm
Week 10 (Mar. 19)	The Effective Use of Statistical Tests	Assignment due Sun. Mar. 24 at 11:59pm Quiz Due Sun. Mar. 24 at 11:59pm
Week 11 (Mar. 26)	Comparing Two Groups	Quiz Due Tues. Apr. 2 at 11:59pm
Week 12 (Apr. 2)	Simple Linear Regression	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 most weeks on Sunday at 11:59PM. See 'Course Schedule' for more details.
In-Person Term Test	25%	Tues. Feb. 13 during class time (Location TBA)
Assignment	20%	Sun. March 24 at 11:59PM
In-Person 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 in-person term test during the course which will take place on campus during class time on February 13, with a time limit of 90 minutes.

The term test is a timed in-person assessment to take place on campus. By enrolling in this offering of STA220, you are affirming that you are available for an in-person test 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. 24 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
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/EWfibAw9tZ

  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/EWfibAw9tZ

  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 sta220@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 'STA220 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 Faculty of Arts and Science.

Calculator Policy
Graphing calculators or calculators with internet capability are prohibited during assessments.

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 STA220 assessments. You may use code provided by your STA220 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.