STA198 Probabilities Everywhere (LEC0101)
Fall 2025

Instructor: Jessie Yeung
Instructor Email: jessie.yeung@utoronto.ca
Lecture Schedule: Wednesday 3:00PM-5:00PM
Lecture Location: See Acorn
Instructor Office Hours: By appointment

Course Description
This course examines the meaning and mathematics of probabilities, and how they arise in our everyday lives. Specific topics may include: the nature of coincidences, the concept of luck, games involving dice and cards, long run averages in casinos, margins of error in polls, the interpretation of medical studies, crime statistics, decision making, pseudorandomness, and Monte Carlo algorithms. Restricted to first-year students. Not eligible for CR/NCR option.

Pre-requisites
At least one grade 12 mathematics course (or the equivalent from another country).

Course Format
This class will meet every Wednesday 3:00PM-5:00PM. The course will be a combination of class discussions, small-group activities, and homework activities.

Before each class, there will be a homework assignment that is to be submitted on Quercus. Homework assignment from select weeks will be graded by the TA.

During each class, we will discuss the readings and homework assigned in the previous week. There will also be in-class activities to be submitted to Quercus by the end of class. In-class activities submitted to Quercus will not be checked for completeness.

After each class, a homework assignment will be assigned that is to be completed before the next class.

Course Assessments

Assessment	**Weight**	**Due Date**
Class Participation (Participation in class discussions, attendance, attention, etc.)	25%	Throughout the Course
In-Class Activity (Activity participation during class, and submission of activity on Quercus)	25%	Due weekly; To be submitted by 11:59PM after each class
Homework Assignments	25%	Due weekly; To be submitted to Quercus before each class
Final Presentation	25%	November 19 or 26

Assessment Policies

- **Class Participation:** Your participation grade will summarize your overall engagement throughout the course. In addition to taking attendance at each class, the course instructor will make note of student engagement after each class.

  You will automatically be excused from your first absence throughout the term. You do not need to contact the course instructor to take advantage of this.

- **In-Class Activity:** In-class activities submitted to Quercus will be checked for completeness, but will not be graded for correctness. Although most in-class activities will be completed in groups, each student must submit the completed activity to Quercus.

  Your in-class activity grade will be the percentage of activities that you have submitted.

  Each student will automatically receive one extension for in-class activities. The first in-class activity that you submit late will be treated as if it were submitted on time.
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- **Homework Assignments:** Five of the homework assignments throughout the term will be graded by the TA. Please see Quercus for a rubric.

  Each student will automatically receive one extension for the homework. The first homework that you submit late will be treated as if it were submitted on time.

- **Final Presentation:** Further instructions and rubric will be provided later in the course.

Prolonged Absences
Flexibility is built into the assessment policies. If there are circumstances that prevent you from meeting a deadline, requests for an extension beyond what is already provided for all students may be granted at the discretion of the instructor. When possible, request for extensions should be made prior to the deadline. The instructor may request the student provide a Verification of Illness form, provide a letter from the College Registrar, or provide a Letter of Academic Accommodation from Accessibility Services.

Course Topics
The following is non-exhaustive list of topics to be covered in this course. Topics are subject to change.
- Probability and Randomness
- Law of Large Numbers
- Expected Value
- Sampling and Data Collection
- Research Design
- Data Visualization
- Statistical Significance

Textbook
Readings and homework assignments will be based on ***Struck by Lightning*** by Jeffrey Rosenthal. This is available through Amazon, Indigo, kobo, kindle, and more.

Email 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.

- Send emails from your UofT email
- Use a subject line that includes the course code 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

Course Materials
All course materials are copyrighted. If they are from the book, the copyright belongs to the book's publisher. If they are provided by an instructor (for example, lecture notes, assignments, 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 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 graded assignments**. Please note, you may not submit for credit any work that was completed by someone else. This includes, but is not limited to, taking partially or fully completed written answers, searching answers to problems, communication of solutions, and plagiarism. You may discuss lecture materials and general course concepts, but it is expected that you work individually and independently through all assignments. To protect yourself from potential academic integrity offences, do not share your assignments anywhere (including on social media sites).

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 any course assessments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding.