

STA198F: Probabilities Everywhere (Fall 2020, online synchronous)

This first-year-seminar 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.

To succeed in this course, it is necessary to actively participate in class discussions, and enthusiastically consider a variety of logical, mathematical, and societal issues from a variety of perspectives.

Course Web Page: <http://probability.ca/sta198>

Prerequisite: At least one grade 12 mathematics course (or the equivalent from another country).

Instructor: [Jeffrey Rosenthal](#), Professor of Statistics, University of Toronto. Email: j.rosenthal@math.toronto.edu

Required Textbook: [Struck by Lightning: The Curious World of Probabilities](#) (available at: [UofT bookstore](#) / [amazon](#) / [indigo](#) / [Kobo](#) / [Kindle](#) / [iBooks](#)). Be sure to obtain this textbook (either hardcopy or electronic) **before the second class**. (We will read and discuss much of the book during class and on homework.)

Class Handouts (pdf): Please download, and if possible print out, the handout(s) for each week's class in advance (but you do not need to read them before class begins): [Week 1](#) / [Week 2](#)

Class meetings: Wednesdays, 3:10-5:00 (Toronto time), online (on Zoom; synchronous only). First class Sept 16, last class Dec 9, no class Nov 11 (Reading Week).

Zoom information: All classes will be conducted **live** (synchronous) over Zoom, and will require significant student **participation**. They will **not** be recorded. Here is some information about using Zoom in this class:

1. The **Zoom link** will be emailed to all enrolled students before the first class. That same link will work for all the classes (and also for any office hours, etc). Please save and bookmark it. However, please do **not** post it publicly, to avoid zoom-bombers. (If you have not received the Zoom link by now, then please email the instructor to receive it.)
2. You should connect on Zoom **before** the class start time of 3:10, hopefully between 3:00 and 3:05.
3. Please connect from a **quiet room**, where you can be alone without any distractions.
4. If possible, use a **laptop or desktop computer**, not an iPad or cell phone -- and the actual Zoom app, not the web browser version -- for best Zoom functionality and viewing.
5. Please leave your computer's **camera on**, so we can all see each other.
6. Optionally, you may wish to **mute your microphone** when you are not speaking, to

- prevent any background noises from disturbing the class.
7. If necessary, use "Rename" on Zoom to have it display your **usual first and last name** (but not your student number).
 8. You should **pay close attention** during class, and refrain from sending or reading any private messages, emails, Facebook posts, etc.
 9. If possible, try to **print out** the day's handout(s) and your homework answers in advance, so you do not have to switch between computer windows during class.
 10. For most of the class we will all be together in the same Zoom main room. But sometimes we will switch to small-group work, where you will be given a group assignment, and then moved into separate Zoom breakout rooms with about 3-4 students in each.
 11. During whole-class discussions, I will select Zoom's "Gallery View", to see the entire class at once. You can select either Gallery View or Speaker View, whichever you prefer. But in the small-group breakout rooms, you should select Gallery View to see all the other people in your group.

Discussion Page: I created a general STA198 Discussion Page on the course's [Quercus](#) page, where students can post comments and questions about the course. Feel free to post course-related messages there any time you want to. I may or may not read your posts myself, but other students can answer them whenever they wish. (I also tried creating a [piazza discussion page](#), though I'm not sure we need it. If you want to use it, but have trouble connecting, then let me know.) You may also wish to form a [study group](#) or join a [drop-in study space](#).

Evaluation (TENTATIVE):

50% Class attendance / punctuality / preparation / attention / participation

25% Homework assignments (weekly, based on textbook readings; to be uploaded to [Quercus](#) and then discussed in class)

25% Final essay (due towards the end of the semester; more details later)

Notes:

1. Classes will involve both student cooperative work in small groups (in Zoom breakout rooms), and whole-class discussion sessions.
2. Students are expected to punctually attend class each week, to enthusiastically participate in discussions and activities during class time, and to conscientiously keep up with readings and other weekly homework. It is crucial to have **excellent attendance** and **be punctual**, to show **interest and enthusiasm** in class activities, and to **speak up often** and **listen carefully to others** during whole-class discussions.
3. Weekly homework will often involve reading from the textbook or other source, and answering various questions about what you have read. It is even better if you can also find additional information beyond the assigned reading.
4. For assistance with writing and studying and life skills, see the resources on the web page [Writing at the University of Toronto](#) and the [Writing Centres](#), and also [ELL](#) and [Accessibility Services](#) and [How Not To Plagiarize](#), and also the [U of T Library](#) including their [research help](#) and [AskChat](#) and the [Innis Librarian](#), and also [Academic Success](#) and the [Health and Wellness Centre](#).

This document is available at probability.ca/sta198, or permanently at probability.ca/jeff/teaching/2021/sta198/