

## STA237H1F: Probability, Statistics and Data Analysis I

### University of Toronto Summer 2025 Syllabus

#### *Academic Calendar description*

An introduction to probability using simulation and mathematical frameworks, with emphasis on the probability needed for more advanced study in statistical practice. Topics covered include probability spaces, random variables, discrete and continuous probability distributions, probability mass, density, and distribution functions, expectation and variance, independence, conditional probability, the law of large numbers, the central limit theorem, sampling distributions. Computer simulation will be taught and used extensively for calculations and to guide the theoretical development.

*Prerequisite:* (MAT135H1, MAT136H1)/ MAT137Y1/ MAT157Y1/(MATA30H3,

MATA36H3)/(MATA31H3, MATA37H3)/(MAT135H5, MAT136H5)/ MAT137Y5/ MAT157Y5

*Corequisite:* (CSC108H1/ equivalent programming experience)/ CSC110Y1/ CSC148H1

*Exclusion:* STA247H1, STA255H1, STA257H1, ECO227Y1, STAB52H3, STA256H5, ECO227Y5

#### *Course Meetings*

<b>Section</b>	<b>Day &amp; Time</b>
<b>Lecture: LEC0101</b>	MW 9:10 AM – 12:00 PM
<b>Tutorials: TUT0101 - TUT0104</b>	MW 12:10 PM – 1:00 PM

#### NOTES:

- Please ensure that you are registered for both a LEC and TUT section.
- Your LEC and TUT room information will be available on ACORN. No unofficial switching of TUT sections is permitted. If you wish to switch, you must do so on ACORN.
- STA237H1F lectures will start Monday, May 5.
- STA237H1F tutorials will start Monday, May 12.
- STA237H1F is an in-person course, so all class meetings are scheduled to take place on campus as per the schedule above. Lectures will not be recorded. During the term, we may need to move the occasional lecture and/or tutorial online. If so, this will be communicated on Quercus Announcements with as much advance notice as possible.

#### *Contact Information and Office Hours*

<b>Person</b>	<b>Role</b>	<b>Email</b>	<b>Weekly Office Hours</b>
<b>Dr. Gracia Dong</b>	Instructor	<a href="mailto:sta237@course.utoronto.ca">sta237@course.utoronto.ca</a>	Posted on Quercus

**Quercus Site:** <https://q.utoronto.ca/courses/389911>

Important announcements and information about the course and assessments will be shared on Quercus. Please familiarize yourself with the shared STA237H1 Quercus site and visit often for updates. Check your mail.utoronto.ca email regularly, and make sure your Quercus notifications are set up based on your preferences so you will not miss important announcements.

PDFs of lecture slides will be posted prior on Quercus prior to lecture.

**Piazza:** <https://piazza.com/utoronto.ca/summer2025/sta237h1flec0101/home>, or through the sidebar on Quercus.

We will use Piazza for course discussions and as a platform for you to ask your peers and the teaching team questions related to course content. You can post anonymously to classmates, but please note that the teaching team will still be able to see your name. All course-content related questions should be posted on Piazza.

Piazza will be an important part of our learning environment and a place where we can connect with others in our STA237H1 learning community, seek help, and support others in this course. So, it is essential that everyone be respectful and polite with others in our STA237H1 learning community. When posting/responding on Piazza, please only type what you would be comfortable saying to someone in-person. Derogatory, discriminatory, or otherwise inappropriate language or topics will be removed at the instructors' discretion and followed up on as appropriate.

STA237H1F course instructors and TAs will be monitoring Piazza regularly. You are encouraged to follow and contribute to the discussion as well. Someone else may post a question that is helpful to your learning. If you know the answer to someone's question and can help, please respond. Explaining a concept or ways to tackle a problem is a great way to connect with others, support the learning community, and strengthen your own learning in the course.

**Inquires related to course content:** Post on Piazza, or attend office hours

**Personal communication:** Email [sta237@course.utoronto.ca](mailto:sta237@course.utoronto.ca) from your mail.utoronto.ca email, or attend office hours

**Additional Notes:** Emails and posts on Piazza will be responded to within 2 business days. Communication outside of the above guidelines may take longer for a response. Questions sent less than 24 hours before assessment dates regarding assessments will not be responded to for equity reasons, as we may not be able to get to all requests.

#### *Required Textbook and Materials*

- Wagaman, A. S., and Dobrow, R. P. (2021) Probability: With Applications and R. 2nd Edition. Wiley.
- [Optional] Dekking, F.M., Kraaikamp, C., Lopuha, H.P., and Meester, L.E (2005) A Modern Introduction to Probability and Statistics: Understanding Why and How, Springer.

Readings and practice problems will be assigned from Wagaman & Dobrow (2021). A digital version of this textbook is available through University of Toronto Libraries:

<https://books-scholarsportal-info.myaccess.library.utoronto.ca/en/read?id=/ebooks/ebooks6/wiley6/2021-06-14/1/9781119692430>

Dekking et al. (2005) is suggested in case you are interested in an additional textbook for different explanations and additional practice problems. A digital version of this text is also available through the library.

### Course Schedule

Date	Textbook Chapters	Lecture Topic	Tutorial Activity	Quercus Activities Open
<b>M 5-May</b>	Chapter 1-2	Introduction to the course, Outcomes, events and probability	NONE	Course Intro Check-In, Reflection 1 (Due Sunday, May 18, 11:59pm)
<b>W 7-May</b>	Chapter 1-2	First principles & Conditional probability and independence	NONE	
<b>M 12-May</b>	Chapter 3-5	Discrete random variables	Tutorial 1	Reflection 2 1 (Due Sunday, May 18, 11:59pm)
<b>W 14-May</b>	Chapter 3-5	Discrete random variables	Quiz 1	
<b>M 19-May</b>	VICTORIA DAY	NONE	NONE	Reflection 3 1 (Due Sunday, May 25, 11:59pm)
<b>W 21-May</b>	Chapter 3-5	Discrete random variables	Tutorial 2	
<b>M 26-May</b>	Chapters 6-7	Continuous random variables	Tutorial 3	Reflection 4 1 (Due Sunday, June 1, 11:59pm)
<b>W 28-May</b>	Chapters 6-7	Continuous random variables	Tutorial 4 (Midterm Review)	
<b>M 2-Jun</b>		Midterm. 10-11:30 in EX100.	NONE	Reflection 5 1 (Due Sunday, June 8, 11:59pm)
<b>W 4-Jun</b>	Chapters 6-7	Continuous random variables	Tutorial 5	
<b>M 9-Jun</b>	Chapter 8-9	Functions of random variables & Joint distributions	Tutorial 6	Reflection 6 (Due Sunday, June 15, 11:59pm)
<b>W 11-Jun</b>	Chapter 8-9	Functions of random variables & Joint distributions	Quiz 2	
<b>M 16-Jun</b>	Chapter 10	Law of large numbers & Central Limit Theorem	Tutorial 7	Reflection 7 (Due Wednesday June 18, 11:59pm)
<b>June 19 – 24, 2025</b>	FINAL EXAM PERIOD	Final Exam (Scheduled by Faculty of Arts and Science)		

### *Assessments and Grading Scheme*

<b>Assessment</b>	<b>Weight</b>
<b>Course Intro Check-In</b>	1%
<b>Course Reflections x 7</b>	9% (1.5% each, best 6 out of 7)
<b>Group Tutorial Quizzes x 2</b>	30% (15% each)
<b>Midterm</b>	20%
<b>Final Exam</b>	40%

Note: No special rounding rules or individual grade adjustments (e.g., to meet GPA cut-offs, minimum grade requirements for program admission or course prerequisites, etc.) will be applied. No special reweighing of assessments that deviate from the marking scheme or the accommodations described in this syllabus will be applied and no extra credit work will be accepted. There are no exceptions to these policies.

#### **Course Intro Check-In and Course Reflections**

The Course Intro Check-In will consist of a syllabus scavenger hunt and some questions regarding prerequisite knowledge. Each course reflection will consist of questions that will highlight some of the important learning outcomes for that week and give you an opportunity to reflect on your learning and the course. ALL questions must be attempted, and the Quercus Quiz must be submitted by the deadline to earn your grade for the Course Intro Check-In or Course Reflections. 0% will be recorded if at least one question is left unanswered, is non-substantive, or if the quiz is not submitted by the deadline (note that it is your responsibility to ensure your Quercus Quiz is submitted by the deadline – do not leave this to the last minute!).

There will be 7 weekly course reflections that you will complete through Quercus Quizzes posted on Monday of each week. Please see the course schedule above for the due dates. The Course Intro Check-In will be released at the start of the course and be due Sunday May 18, 11:59pm.

Your best 6 out of 7 Course Reflection grades will be used to calculate your course grade. There is no accommodation for missed weekly course reflections available beyond the flexibility built into the grading scheme.

#### **Tutorial Quizzes**

There will be 2x45-minute tutorial quizzes during the term to give you a chance to work on problems on recent course material and receive feedback on your learning. These quizzes may be completed collaboratively in groups of up to 3 students enrolled in your TUT section who are present and actively contributing to the tutorial quiz that day. No communication outside your group, nor use of unauthorized aids (e.g., cell phones, etc.) are permitted. Quizzes must be written in the tutorial section in which you are officially enrolled (i.e., your TUT section showing on ACORN), and you will be asked to show your student ID and sign the sign-in sheet at tutorials. A grade of 0% will be recorded if you are not present at your tutorial the day of the tutorial quiz or if you write a tutorial quiz in another TUT section.

There are no tutorial quiz make-ups. If you miss a tutorial quiz for a legitimate reason (e.g., illness, etc.), you must request accommodation by following the steps described in the “Missed Assessment” section below within one week of the missed quiz. If no request for accommodation is received through the “Missed STA237H1F Assessment Form” by the deadline for your missed tutorial quiz (or it is incomplete), your tutorial quiz grade will be recorded as 0%.

- If appropriate documentation is received through the “Missed STA237H1F Assessment Form” by the deadline for a missed tutorial quiz #1, the weight of your missed tutorial quiz #1 will be shifted to your midterm.

- If appropriate documentation is received through the “Missed STA237H1F Assessment Form” by the deadline for a missed tutorial quiz #2, the weight of your missed tutorial quiz #2 will be shifted to your final exam.

### **Midterm**

There will be a 90-minute midterm exam (combination of multiple-choice and written-answer questions) on 10-11:30 AM on Monday, June 2 in EX100. You must bring your University of Toronto student identification (i.e., your TCard) to the midterm exam. Information on midterm will be posted on Quercus in advance. The midterm is to be completed independently. Absolutely no communication with others nor use of unauthorized aids are permitted.

If you miss the midterm for a legitimate reason (e.g., conflict with a lecture or tutorial for another course, illness, etc.), you must report your absence as soon as possible and within one week by following the steps described in the “Missed Assessment” section, and the weight of your midterm will be shifted to your final exam. If no request for accommodation is received for your missed midterm, your midterm grade will be recorded as 0%.

### **Final Exam**

There will be a 2-hour cumulative final exam (combination of multiple-choice and written-answer questions) scheduled by the Faculty of Arts and Science during the final exam period. You must bring your University of Toronto student identification (i.e., your TCard) to the final exam. Information about the exam will be posted on Quercus in advance. The final exam is to be completed independently. Absolutely no communication with others nor use of unauthorized aids are permitted.

Final exam conflicts and petitions for a deferred exam must be brought to the Faculty of Arts and Science, not your instructors. Information on exam conflicts is available at <https://www.artsci.utoronto.ca/current/faculty-registrar/exams-assessments/exam-conflicts>. Information on how to request a deferred exam due to illness or another valid reason is available at: <https://www.artsci.utoronto.ca/current/faculty-registrar/petitions/deferred-exams>.

### ***Missed Assessments***

There are no accommodation nor make-ups for missed weekly course reflections beyond the flexibility built into the marking scheme. Please refer to the previous section for more information on the available accommodation for the remaining assessments.

To request accommodation for a missed tutorial quiz or midterm, you must complete the “Missed STA237H1F Assessment Form” (available on Quercus) within one week of missing the tutorial quiz or midterm. In this form, you will need to upload/submit one of the following supporting documents that covers the date(s) of your missed assessments:

- Absence declaration via ACORN (see <https://www.artsci.utoronto.ca/current/academics/student-absences> for important information on eligibility)
- U of T Verification of Illness or Injury Form (VOI) – see <http://www.illnessverification.utoronto.ca/index.php>
- College Registrar's letter
- Letter of Academic Accommodation from Accessibility Services

Since the tutorial quizzes and midterm are scheduled during regular class meeting times, course conflicts are not considered a valid reason for a missed quiz or midterm.

If you are absent for an extended period, please contact your College Registrar’s Office as soon as possible for support and advice.

### *Regrade Policy*

There are no regrades for weekly course reflections, and requests for final exam regrades must be made through the Faculty of Arts & Science (please see below). Any requests to have a tutorial quiz or midterm regraded must be made in writing through completion of the “STA237H1F Regrade Request Form” (available on Quercus) within one week of the date the marks are posted on Quercus. Keep in mind that it is possible for your grade to go down if the regraded mark is lower than your original grade: your grade may increase, stay the same, or it may go down based on the regrade. Late regrade requests or requests submitted in other ways (e.g., by email, in office hours, etc.) will not be considered.

Final exam viewing and regrade request must be made to the Faculty of Arts and Science. Please refer to <https://www.artsci.utoronto.ca/current/faculty-registrar/exams-assessments/exam-viewing> and <https://www.artsci.utoronto.ca/current/faculty-registrar/exams-assessments/exam-recheck-or-reread>.

### *Equity, Diversity, and Inclusion*

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another’s differences. U of T does not condone discrimination or harassment against any persons or communities.

### *Accommodations*

If you have a consideration that may require accommodations, please contact Accessibility Services: <https://www.studentlife.utoronto.ca/as> , 416-978-8060 or [accessibility.services@utoronto.ca](mailto:accessibility.services@utoronto.ca)

### *Mental Health Resources and Services*

Your mental health and well-being are important. If you have an urgent concern about school, health or life in general, the U of T Telus Health Student Support (formally known as U of T MySSP) offers confidential support 24/7 via phone or chat. Please see <https://mentalhealth.utoronto.ca/> for information on this and other supports and services available to you at the University of Toronto.

### *Academic Integrity*

The University of Toronto treats cases of academic misconduct very seriously. Academic integrity is a fundamental value of learning and scholarship at the university. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that your degree is valued and respected as a true signifier of your individual academic achievement.

The University of Toronto’s Code of Behaviour on Academic Matters <https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019> outlines the behaviours that constitute academic misconduct, the processes for addressing academic offences, and the penalties that may be imposed. You are expected to be familiar with the contents of this document. You are encouraged to visit <https://www.academicintegrity.utoronto.ca/> for more information on Academic Integrity at the University of Toronto.

In STA237H1F, potential offences include, but are not limited to, sharing or discussing tutorial quiz, midterm or final exam questions or answers with others or obtaining unauthorized assistance from online sources, generative AI (e.g., ChatGPT – see the “Use of Generative AI in

STA237H1F” section below), your peers, or tutoring services or providing unauthorized assistance to others. Details on the supports available in this course are listed in the “Course Contact Information and Office Hours” section of this syllabus and on Quercus, and information on the nature of each assessment is included in the “Assessments and Marking Scheme” section.

All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code of Behaviour on Academic Matters. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact the teaching team at [sta237@course.utoronto.ca](mailto:sta237@course.utoronto.ca).

### *Use of Generative AI*

This course policy has been designed to promote your learning and intellectual development and to help you achieve course learning outcomes.

The use of generative artificial intelligence tools and apps is strictly prohibited in all course assessments (i.e., course reflections, tutorial quizzes, midterm and final exam) unless explicitly stated otherwise by the course instructors on assessment instructions. This includes ChatGPT, Copilot, Google Gemini, and other AI writing and coding assistants. Students may not copy or paraphrase from any generative artificial intelligence applications, including ChatGPT and other AI writing and coding assistants, for the purpose of completing assessments in this course. Use of generative AI in this course is considered use of an unauthorized aid, which is a form of cheating.

### *Intellectual Property Statement*

The University considers an instructor’s lectures and course materials to be the instructor’s intellectual property covered by the Canadian Copyright Act.

STA237H1F lectures and tutorials will not be recorded, and no video recording of lectures or tutorials will be permitted under any circumstances. Students wishing to record audio or take photos in lectures or tutorials or other course material in any way must ask for the instructors’ explicit permission and may not do so unless permission is granted. In STA237H1F, this permission must be requested in writing and in advance by sending an email to [sta237@course.utoronto.ca](mailto:sta237@course.utoronto.ca). If permission is granted, this applies only for your own study purposes and does *\*not\** include permission to publish, share or distribute them in any way.

Note too that it is forbidden to publish, share, or distribute any other STA237H1F materials and assessments that are shared on Quercus or Crowdmark. Sharing, posting, selling, or using this material outside of your personal use in this course is not permitted under any circumstances and is considered an infringement of intellectual property rights.