

STA255H1 S

Statistical Theory

Winter 2026 Syllabus

Course Meetings

STA255H1 S

Section	Day & Time	Delivery Mode & Location
LEC0101	Tuesday, 11:00 AM - 1:00 PM	In Person: NF 003
	Thursday, 12:00 PM - 1:00 PM	In Person: OI G162
TUT0101	Thursday, 11:00 AM - 12:00 PM	In Person: EM 001
TUT0102	Thursday, 11:00 AM - 12:00 PM	In Person: BL 205
TUT0103	Thursday, 11:00 AM - 12:00 PM	In Person: OI 5170
TUT0104	To Be Announced	In Person : To Be Announced
TUT0105	Thursday, 11:00 AM - 12:00 PM	In Person: OI 5150

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Course Website: <https://q.utoronto.ca/courses/427127>

Instructor: Dr Lijia Wang

Email: lijialj.wang@utoronto.ca

Office Hours and Location: Every Thursday, 2:00 - 3:00 PM at UC148 (University College -15 King's College Circle, Toronto, ON M5S 3H7)

Additional Notes: All communication regarding course-related issues should be directed to the course email at sta255@course.utoronto.ca. This email is monitored during regular business hours only (i.e. Monday-Friday from 9am - 5pm). Please allow up to 24-48 hours for a response.

Course Overview

This courses deals with the mathematical aspects of some of the topics discussed in STA220H1. Topics include discrete and continuous probability distributions, conditional probability, expectation, sampling distributions, estimation and testing, the linear model (Note: STA255H1 does not count as a distribution requirement course).

Topics include discrete and continuous probability distributions, conditional probability, expectation, sampling distributions, estimation and testing, the linear model.

Prerequisites: STA220H1/ STA221H1/ STA288H1/ ECO220Y1 (note: ECO220Y1 may be taken as a co-requisite)/ STAB22H3/ STA220H5/ ECO220Y5; MAT133Y1 (70%)/ (MAT135H1, MAT136H1)/ MAT137Y1/ MAT157Y1/ (MATA32H3 (70%), MATA33H3 (70%))/ (MATA29H3 (70%), MATA35H3 (70%))/ (MATA30H3, MATA36H3)/ (MATA31H3, MATA37H3)/ MAT133Y5 (70%)/ (MAT132H5 (70%), MAT134H5 (70%))/ (MAT135H5, MAT136H5)/ MAT137Y5/ MAT157Y5/ (MAT137H5, MAT139H5)/ (MAT157H5, MAT159H5)

Corequisites: None

Exclusions: ECO227Y1/ STA201H1/ STA237H1/ STA238H1/ STA257H1/ STA261H1/ STA247H1/ STA248H1/ STAB52H3/ STAB57H3/ STA256H5/ STA260H5

Recommended Preparation: None

Credit Value: 0.5

Course Materials

Textbook:

There is no formal textbook for this course. However, should a student wish to refer to a textbook for additional explanation or preparation, the followings are recommended:

Robert V. Hogg, Joseph W. McKean and Allen T. Craig. *An Introduction to Mathematical Statistics, 8th edition*. A pdf copy is available [here](#).

F.M. Dekking. *A Modern Introduction to Probability and Statistics: Understanding Why and How*. A pdf copy is available [here](#).

Statistical software:

The R statistical software will be used to illustrate and apply the course content and will be required for a variety of assessments.

Online discussion forum:

Piazza will be used as an online discussion forum for this course. You will receive an invitation to the forum shortly after the term begins. The discussion forum is for student-led discussion, and the TAs will check the posts on a regular basis and might participate in discussions. 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 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.

Marking Scheme

Assessment	Percent	Details	Due Date
Midterm Test	30%	There will be one midterm test during the course, with a duration of 90 minutes. The midterm test is scheduled for Thursday, February 26, 2026, and will take place during the regular lecture and tutorial time, as detailed below: Date: February 26, 2026, Thursday (during lecture and tutorial time) Time: 11:15 AM – 12:45 PM Location: EX 200 (Exam Centre) The midterm test and quizzes are in-person timed assessments. By enrolling in this course, you are affirming that you are available on campus during the test time slot.	2026-02-26
Quiz 1	20%	There will be two quizzes during the course, each with a duration of 60 minutes. Quiz 1 is scheduled for Thursday, January 22, 2026, and will take place during the tutorial time, as detailed below: Date: January 22, 2026, Thursday (during tutorial time) Time: 11:00 AM – 12:00 PM Location: EX 200 (Exam Centre)	2026-01-22
Quiz 2	20%	Quiz 2 is scheduled for Thursday, March 12, 2026, and will take place during the tutorial time, as detailed below: Date: March 12, 2026, Thursday (during tutorial time) Time: 11:00 AM – 12:00 PM Location: EX 200 (Exam Centre)	2026-03-12
Participation (bonus)	5%	A participation bonus of up to 5% will be awarded to encourage active engagement in the course. Detailed marking guidelines are provided in the section below.	No Specific Date
In-Person Final Exam	30%		Final Exam Period

Marking Guidelines for the Participation Bonus

Participation marks are awarded for genuine and meaningful engagement with the course. The following guidelines apply:

In-class participation: Students may earn 0.5% per class for active participation, such as asking a meaningful question, answering a question posed by the instructor, or engaging constructively in discussions with the instructor or peers.

Out-of-class participation (Office Hours): Students may earn 0.5% for attending office hours and asking a meaningful question related to the course material or engaging constructively in discussions with the instructor or peers.

Online discussion board: Students may earn 0.5% per week by providing a meaningful and substantive response to questions posted on the online discussion board.

Please note that participation marks are **not** awarded automatically. To receive credit, a student's contribution must be *genuine*, *relevant*, and *meaningful*. The instructor will determine, in each instance, whether a student's participation qualifies for the participation mark.

Late Assessment Submissions Policy

See Policies & Statements Section for a more detailed explanation regarding policies on late submission and missed assessments.

Course Schedule

Week	Description
Week 1 Jan. 05 - Jan. 09	Course Introduction, Set Notations and Introduction to Probability
Week 2 Jan. 12 - Jan. 16	Event and Probability
Week 3 Jan. 19 - Jan. 23	Random Variable; Quiz 1
Week 4 Jan. 26 - Jan. 30	Discrete Random Variable and Common Discrete Distributions
Week 5 Feb. 02 - Feb. 06	Continuous Random Variable and Common Continuous Distributions
Week 6	Bivariate and Multivariate Distributions

Feb. 09 - Feb. 13	
Reading Week Feb. 16 - Feb. 20	Reading Week (No Classes)
Week 7 Feb. 23 - Feb. 27	Introduction to Statistics and Sampling Distribution; Midterm Test
Week 8 Mar. 02 - Mar. 06	Summary of Data
Week 9 Mar. 09 - Mar. 13	Statistical Estimation; Quiz 2
Week 10 Mar. 16 - Mar. 20	Confidence Interval
Week 11 Mar. 23 - Mar. 27	Hypothesis Test
Week 12 Mar. 30 - Apr. 03	Introduction to Linear Regression

Policies & Statements

Religious Accommodations

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of cultural and religious traditions. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (such as a test or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

Students with Disabilities or Accommodation Requirements

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility

Services (AS) at the beginning of the academic year by visiting <https://studentlife.utoronto.ca/department/accessibility-services/>. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.

Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the [Code of Behaviour on Academic Matters](https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019) (<https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019>). If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources. For example, to learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at <http://www.writing.utoronto.ca>. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see [A&S Student Academic Integrity](https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity) (<https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity>) and the [University of Toronto Website on Academic Integrity](https://www.academicintegrity.utoronto.ca) (<https://www.academicintegrity.utoronto.ca>).

Specific Medical Circumstances

If you become ill and it affects your ability to do your academic work, consult me right away. Normally, I will ask you for documentation in support of your specific medical circumstances. This documentation can be an Absence Declaration (via ACORN) or the University's Verification of Student Illness or Injury (VOI) form. The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness. If you cannot submit a VOI due to limits on terms of use, you can submit a different form (like a letter from a doctor), as long as it is an original document, and it contains the same information as the VOI (including dates, academic impact, practitioner's signature, phone and registration number). For more information on the VOI, please see <http://www.illnessverification.utoronto.ca>. For information on Absence Declaration Tool for A&S students, please see <https://www.artsci.utoronto.ca/absence>. If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or other forms of academic consideration. They may be able to email your instructors directly to provide a College Registrar's letter of support and connect you with other helpful resources on campus.

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.

Assignment Submission Method

All assignments should be submitted via Crowdmark.

Course Materials, including lecture notes

Course materials are provided for the exclusive use of enrolled students. These materials should not be reposted, shared, put in the public domain, or otherwise distributed without the explicit permission of the instructor. These materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. Students violating these policies will be subject to disciplinary actions under the Code of Student Conduct.

Late/Missed Assessments (STA255)

Late Assignments: No late submissions are allowed

Missed Midterm Test: Students who miss the midterm test with valid documentation or an approved absence declaration will have the weight of the test shifted to the final. There will not be make-up tests. Alternatively, if the test is missed without valid reasons and/or no valid documentation or an approved absence declaration is provided, a score of zero will be given.

Missed Quiz: Students who miss one quiz with valid documentation or an approved absence declaration will have the weight of that quiz shifted to the other quiz. In the rare case that a student misses both quizzes with valid documentation or an approved absence declaration, the combined weight of the two missed quizzes will be shifted to the final exam. There will not be make-up quizzes. Alternatively, if the quiz is missed without valid reasons and/or no valid documentation or an approved absence declaration is provided, a score of zero will be given.

Missed Assignments: If the assignment is missed due to valid reasons stated above and valid documentation or an approved absence declaration is provided, the weight of the missed assignment will be shifted to the other assignment(s). Alternatively, if the assignment is missed without valid reasons and/or no valid documentation or an approved absence declaration is provided, a score of zero will be given. Students will be given enough time to work on the assignment, so late submission will not be accepted.

Missed Final Exam: If you are not able to attend your final exam at the scheduled time 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.

For a missed term test, students must provide valid documentation such as the Verification of Illness or Injury. For more information, Please check <https://www.artsci.utoronto.ca/faculty->

[staff/teaching/academic-handbook#2023-24-updates-accordion-3](#). ONCE per semester, each student is allowed to miss work without any documentation. In that case you must fill out the ACORN absence declaration form. The form can be used at most ONCE per semester (once in total for all of your courses, not once per course). The absence you declare can be for a maximum of 7 consecutive days. In the case that a student needs other accommodation, please obtain the Letter from the College Registrar, Letter of Academic Accommodation from Accessibility Services, etc.