

Summer 2018

University of Toronto

STA347H1S – Probability

Tuesday and Thursday 6:10 pm - 9:00 pm
Medical Sciences Building, Room MS 3154

Instructor: **Dr. Vladimir Vinogradov**
Office: Stewart Building (also known as Rotman South),
149 College St.:
<http://map.utoronto.ca/building/192>
Room: EP 103A (ground floor)
e-mail: vv.vinogradov@utoronto.ca
skype: fusp2015project4

Instructor's office hours: **Tuesday and Thursday 3:45 pm - 4:45 pm**

Teaching Assistants: **Alex Yang; Jun Yang**

Teaching Assistants' office hours: **Monday 3:00 pm - 4:00 pm**
(held in Stats Aid Centre SS623B,
Sidney Smith Hall basement),
100 St. George St.:
<http://map.utoronto.ca/building/033>

Prerequisites:

STA247H1/STA255H1(70%)/STA237H1(70%)/STA257H1/ECO227Y1,
MAT223H1/MAT240H1, MAT235Y1/MAT237Y1/MAT257Y1
(Note: STA257H1, MAT223H1/MAT240H1, MAT237Y1/MAT257Y1 are
very strongly recommended.)

Exclusion: MAT377H1

Main Required Text: *A First Course in Probability*, 9th ed. by Sheldon M. Ross
(On reserve at Mathematical Sciences Library, QA273.R83 2014)

Additional Required Text: *Introduction to Probability Models*, 11th ed. by
Sheldon M. Ross

Electronic access is available through the University of Toronto Library:
<https://www.sciencedirect-com.myaccess.library.utoronto.ca/science/book/9780124079489>

Mid term examination will be held during the first hour of **Tuesday July 24, 2018** class meeting, **6:10 pm – 7:10 pm**.

The quiz will be held during the first hour of **Thursday August 2, 2018** class meeting, **6:10 pm – 7:10 pm**.

Final examination will be **comprehensive** and take place in August, 2018. The final exam duration is **three hours**. Students will be informed on its date, time, and location in the due course.

Marking Policy: The quiz will be weighted 15%, midterm 35% and the final exam 50%.

Term work consists of one midterm test and one quiz. There will be no make-up tests. Instead, for legitimate absences, missed work will be replaced by the corresponding percentage earned on the final exam. To be excused, students must submit a written request.

Home work assignments will be given on the regular basis but **not collected**. Instead, students will be tested on their home work during August 2, 2018 quiz.

Attendance is mandatory.

Course Syllabus:

An overview of probability from a non-measure theoretic point of view. Random variables and vectors; independence; conditional expectation, conditional probability and consequences; various types of convergence leading to proofs of the major theorems in basic probability. An introduction to simple stochastic processes such as Poisson and branching processes.

More topics may be added, depending on students' interests and the instructor's preferences, such as additional results on almost-sure convergence or those on weak convergence to general infinitely divisible distributions, variations of Poisson process and more general Markov chains (as compared to the Poisson process and branching models). Students will be responsible for such topics added.

We plan to cover selected topics from Chapters 6-9 of the main required text as well as selected topics from Chapters 4-6 of the additional required text if time permits.

Remarking policy: Remarking requests should be initiated by writing or typing a detailed explanation of your concern (together with your full name, student ID number, e-mail address, and telephone number), submitting the signed hard copy on a separate piece of paper, and giving this together with your original unaltered test paper to the instructor within one week of when the marked test was first available.

Special Notes:

1. Absolutely no cell phone use!
2. The use of one non-programmable, non-graphing calculator is permitted during the final examination, midterm and quiz.
3. In case of suspicion of cheating, students will have to go through the academic integrity process. See the following link for more information:

<http://www.artsci.utoronto.ca/osai/The-rules/what-is-academic-misconduct>