

SYLLABUS

INSTRUCTOR: Dr. Ky Tran

OFFICE: B525

LECTURE: TUTH 2:00 PM - 3:20 PM; REC: M 1:00 PM - 1:55 PM; Room: A312.

OFFICE HOURS: M: 2:00 PM - 3:00 PM, TUTH: 3:30 PM - 4:30 PM or by appointment

EMAIL: ky.tran@stonybrook.edu

PHONE: 82-32-626-1911

COURSE WEBSITE: Blackboard

COURSE DESCRIPTION: The topics include sample spaces, axioms of probability, conditional probability and independence, discrete and continuous random variables, jointly distributed random variables, characteristics of random variables, law of large numbers and central limit theorem, Markov chains.

TEXTBOOK: “A First Course in Probability” by Sheldon Ross, 9th edition, 2014, Pearson Publishing; ISBN:9780321794772 (required)

“Introduction to Probability” by Joseph Blitzstein & Jessica Hwang, 2nd edition, 2019, Chapman & Hall; ISBN: 9781138369917 (recommended).

HOMEWORK: Homework assignments are given weekly. No late assignment will be accepted. Please submit the questions in the order in which they are assigned and submit a detailed and complete solution for full credit on each question. Your work should be neat and clean if your instructor is expected to read it. This is your opportunity to showcase what you understand.

Homework will be submitted directly to Blackboard. There will be no paper homework collected, eliminating any possibility of lost assignments. Write out your complete solutions on paper. Then use your scanner or mobile application such as tiny scanner app (Adobe Scan is a great app, you can download from Play Store or Apple Store. Another candidate is CamScanner) to take pictures of your assignment and save them as ONE single PDF. This PDF is what you will submit via Blackboard under your assignment. Submitting your work as multiple PDFs or in alternate formats is not acceptable and your assignment will not be graded.

You may discuss homework problems with other classmates, or with your instructor. However, you must write the solutions by yourselves in order to be accepted.

The lowest two homework scores will be dropped before computing the average.

EXAM

Midterm 1 (tentative): TU, October 18, 2022

Midterm 2 (tentative): TU, November 15, 2022

Final: TBA

No make-ups are allowed if you miss an exam without serious and documented reason.

GRADING POLICY

The final grade is based upon the following:

Homework: 20%; Midterm 1: 25%; Midterm 2: 25%; Final: 30%.

By the School Policy of Attendance, if a student has more than 20% unexcused absences, the student's final grade will be an F.

Grade Scale:

Percentage	Grade
[93, 100]	A
[90, 93)	A-
[87, 90)	B+
[83, 87)	B
[80, 83)	B-
[77, 80)	C+
[73, 77)	C
[70, 73)	C-
[67, 70)	D+
[63, 67)	D
[60, 63)	D-
[0, 60)	F

CELL PHONE AND OTHER ELECTRONIC DEVICES: Cell phones and other electronic devices use are not permitted in class for any reason, thus eliminating distractions. Please set your cell phones to silent mode, and turn off all your electronic devices during the class time. If you are expecting an emergency call, please sit near the door, and answer the phone outside.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- calculate probabilities of events by working with sets that represent them;
- use the law of total probability and Baye's rule to calculate probabilities of complex events;
- use random variables and their distributions to model the outcomes of random experiments;
- apply the general properties of the expectation and variance operators;

- calculate cumulative distributions, marginal distributions, conditional distributions, and moment generating functions;
- understand the basic convergence modes of random variables;
- explain and use the law of large numbers and the central limit theorem.

School Policy on Attendance

1. If a student has over 20% unexcused absences, the student's final course grade will be an F.
2. Students should report the reason of absence to the professor in advance, or immediately after the absence.
3. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the professor.
4. The professor of the course reserves the right to excuse absences.
5. The professor may excuse the absence if the submitted documentation fulfills the following conditions: extreme emergencies, severe medical reasons with doctor's note, very important events.

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Cheating Policy

The grade of Q is assigned to a student found guilty of academic dishonesty. The Q remains on the transcript and is computed in your G.P.A. as a grade of F. Furthermore, a note describing the academic dishonesty is attached to your permanent records with the university.

Accommodations for Disabilities

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact One-Stop Service Center, Academic Building A201, (82) 32-626-1117. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. In addition, this statement on emergency evacuation is often included, but not required. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and One-Stop Service Center.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Course Evaluations

Stony Brook University values student feedback in maintaining the high quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the the following link to access the course evaluation system: <http://stonybrook.campuslabs.com/courseeval/>