

MATH 3338-05 (17666)

Probability, Fall 2022

Instructor: Edward P. C. Kao
Time: TTh : 2:30 – 4:00 pm
Class Venue: SEC206
Office: 629-PGH (713) 743-3456, website: www.math.uh.edu/~edkao
ekao@uh.edu
Grader/TA: Md Amron Hossan Mojamder [mmojamde@cougarnet.uh.edu](mailto:mamojamde@cougarnet.uh.edu)

Course Objective: This course is intended to help students build a solid foundation on basic probability. Such a background is crucial in studying subjects like statistics, A.I., and financial mathematics. Emphases will be placed on developing problem solving skills and a thorough understanding of basic concepts. These concepts include conditional expectations, the law of total probability (problem solving by conditioning), discrete, continuous, and jointly distributed random variables (particularly bivariate normal), transformation of random variables, Jensen's inequality, and limit theorems.

Grading Guide:	Homework	10%
	Midterm	40%
	Final	50%

Final Exam: 2:00 p.m. – 5 p.m., December 13, 2022, Tuesday
(per UH Fall 2022 Final Exam Schedule)

Required Text: *An Introduction to Probability with Mathematica*,
by Edward P. C. Kao, World Scientific, May 2022.

Homework: Weekly homework assignments. To be completed in the form of a Mathematica Notebook and emailed to the grader. late submissions will not be accepted.

Week	Dates	Topics	Chapter in Text
1	8/23, 8/25	Combinatorial analysis	1
2	8/30, 8/31	Axioms of probability	2
3	9/6, 9/8	Conditional probability	3
4	9/13, 9/15	Conditional probability	3
5	9/20, 9/22	Random variables	4
6	9/27, 9/29	Discrete random variables	5
7	10/4, 10/6	Discrete random variables	5
8	10/11 10/13	Continuous random variables Midterm Exam	6
9	10/18, 10/20	Continuous random variables	6
10	10/25, 10/27	Jointly distributed random variables	7
11	11/1, 11/3	Jointly distributed random variables	7
12	11/8, 11/10	Expectations	8
13	11/15, 11/17	More on expectations	8
14	11/22 11/24	Limit theorems Thanksgiving Holiday (no classes)	9
15	11/29, 12/1	Limit Theorem	9

UNIVERSITY OF HOUSTON SYLLABUS LANGUAGE: FALL 2022

Required Language for Courses with a Face-to Face Component

If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see [Student Protocols](#) for what to do if you experience symptoms and [Potential Exposure to Coronavirus](#) for what to do if you have potentially been exposed to COVID-19. Consult the (select: [Undergraduate Excused Absence Policy](#) or [Graduate Excused Absence Policy](#)) for information regarding excused absences due to medical reasons.

Required Language for All Courses

COVID-19 Information

Students are encouraged to visit the University's [COVID-19](#) website for important information including diagnosis and symptom protocols, on-campus testing, and vaccine information. Please check the website throughout the semester for updates.

Vaccinations

Data suggests that vaccination remains the best intervention for reliable protection against COVID-19. Students are asked to familiarize themselves with pertinent [vaccine information](#) and to consult with their health care provider. The University strongly encourages all students, faculty and staff to be vaccinated.

Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact [the Justin Dart Jr. Student Accessibility Center](#) (formerly the Justin Dart, Jr. Center for Students with DisABILITIES).

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Undergraduate Excused Absence Policy](#) and [Graduate Excused Absence Policy](#) for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and