UCONN
UNIVERSITY OF CONNECTICUT

Department of Statistics
College of Liberal Arts & Sciences

STAT 3375Q: Introduction to Mathematical Statistics I

Spring 2024

January 17, 2024

Instructor:	Mary Lai Salvaña, Ph.D.	**Lectures:**	MW 4:40-5:55PM, YNG 327
Email:	marylai.salvana@uconn.edu	**Discussions:**	F 1:25-2:15PM, AUST 344

Course Pages: marylaisalvana.com/#teaching and HuskyCT (soon)

Office Hours: MW, 3:30-4:30PM, AUST 330

TA: Banani Bera (banani.bera@uconn.edu)

Textbook: Mathematical Statistics with Applications, 7th edition, by Wackerly, Mendenhall & Scheaffer, Cengage Learning.

Course Goal: Upon completion of this course, students are expected to understand and apply basic concepts in mathematical statistics. In particular, students will study concepts of probability theory, discrete and continuous random variables and their probability distributions, expected value, multivariate probability distributions and functions of random variables.

Prerequisites: A grade of C+ or better in MATH 2110Q or 2130Q.
A grade of I will only be given to a student who is passing the course and cannot complete the course due to illness or other well-documented circumstances beyond his/her control.

Grading Policy: Quizzes (25%), Midterm 1 (25%), Midterm 2 (25%), Final (25%).
Your total weighted score will be rounded to the nearest integer and grades will be assigned according to the following scale:

A	93-100	C	73-76
A−	90-92	C−	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B−	80-82	D−	60-62
C+	77-79	F	0-59

Homeworks: Homework assignments will play a very important role in this course. Homework assignments will encompass book problems of chapters 1-6. There will be recommended homework assignments every week, which will NOT be collected or graded. Many problems and questions on the quizzes and exams will be based on the homework problems and examples discussed in the class. Recommended homework

assignments will be discussed in the discussion session by your TA. The solution of some challenging problems will be posted on HuskyCT.

Quizzes: A 15-minute quiz will be given on five lecture sessions, spread across the semester. Quizzes are administered inside the classroom. Only the best four quizzes count toward your grade. No make-up quizzes will be given.

Exams: Midterm and final exams will cover both theory and application of the statistical concepts learned in class. Final exam is comprehensive. Exams will be administered online via HuskyCT, but you will be taking them inside the classroom. Students are required to be available for their exam during the scheduled time. Any conflict with the timing must be communicated with the Dean of Students Office. Missed exams cannot be made up unless with documentation of reasons required by University policy.

Attendance: Regular attendance is essential and expected but not mandatory. Beginning Spring 2024, instructors are required to submit the date of last academic engagement of students with non-passing grades. Thus, I will be taking attendance but such record will only be relevant for documenting the last attended class of those with non-passing grades.

At any time in the semester, you may reach out to the Dean of Students Office (Storrs) or Regional Student Services Office (regional campuses) if you need support or help in getting connected with the appropriate resources.

Class & University Policies: Review UConn's Academic, Scholarly, and Professional Integrity and Misconduct policy. Note that lack of knowledge of the academic and scholarly integrity policy is not a reasonable explanation for a violation.

Important Dates:

Quizzes ..... Jan 24, Feb 7, Feb 28, Mar 20, Apr 17, 2024
Midterm Exam 1 ..... Feb 14, 2024
Midterm Exam 2 ..... Apr 3, 2024
Final Exam ..... Apr 29-May 4, 2024

Course Schedule:

Week	Topics	Book Chapters
Jan 16-19, 2024	Probability: Introduction and definition Review of set notations Probabilistic model	2.1-2.4
Jan 22-26, 2024	Counting rules Conditional probability Independence Quiz 1 (Wed, Jan 24)	2.5-2.9
Jan 29-Feb 2, 2024	Bayes' rule Discrete random variables: Definition Expected value	2.10-3.3
Feb 5-9, 2024	Special discrete distributions Bernoulli, Binomial, Negative Binomial	3.4-3.6

	Quiz 2 (Wed, Feb 7)	
Feb 12-16, 2024	Hypergeometric, Poisson Review problems for Midterm 1 Midterm Exam 1 (Wed, Feb 14)	3.7-3.8
Feb 19-23, 2024	Continuous random variables: Definition Expected value	4.1-4.3
Feb 26-Mar 1, 2024	Special continuous distributions Uniform, Normal, Student's-t Quiz 3 (Wed, Feb 28)	4.4-4.5
Mar 4-8, 2024	Exponential, Gamma, Beta	4.6-4.8
Mar 11-15, 2024	Spring Break	
Mar 18-22, 2024	Other expected values Multivariate probability distributions: Introduction Quiz 4 (Wed, Mar 20)	4.9, 5.1-5.2
Mar 25-29, 2024	Marginal and conditional probability distributions Independent random variables	5.3-5.4
Apr 1-5, 2024	Expectation and covariance Multinomial Distribution Review problems for Midterm 1 Midterm Exam 2 (Wed, Apr 3)	5.5-5.9
Apr 8-12, 2024	Function of random variables The method of distribution function	6.1-6.3
Apr 15-19, 2024	The method of transformation Quiz 5 (Wed, Apr 17)	6.4, 6.6
Apr 22-26, 2024	Order statistics Review problems for Final Exam	6.7
Apr 27-28, 2024	Reading Days	
Apr 29-May 4, 2024	Final Exam (TBD - See University Registrar schedule)	