Hunter College of The City University of New York

STAT 311/701 Probability Theory 3 hrs, 3 cr

Required textbook

A First Course in Probability (ninth edition) by Sheldon Ross, ISBN 978 – 0--321 – 79477-2.

Learning outcomes

Students will learn basic principles of counting, axioms of probability, random variables, and fundamental limit theorems. After taking this class students should be able to compute probabilities of events, to understand and apply the concepts of conditional probability and independence, to understand and apply the concepts of discrete and continuous random variables and compute their moments, as well as learn and apply the law of large numbers and the central limit theorem.

Exam problems have different weights for the STAT 311 and STAT 701 students; graduate students are required to address more problems. However, undergraduates who give solutions for the STAT 701 problems will receive the respective extra credit.

Tentative Schedule

- Week 1: Ross, Chapters 1, 2 Combinatorial Analysis; Axioms of Probability
- Week 2: Ross, Chapter 3 Conditional Probability and Independence
- Week 3: Ross, Chapter 3 (continued)
- Week 4: Ross, Chapter 4 Random Variables
- Week 5: Ross, Chapter 5 Continuous Random Variables
- Week 6: Ross, Chapter 5 (continued)
- Week 7: Ross, Chapter 6 Jointly Distributed Random Variables
- Week 8 review for midterm; midterm
- Week 9: Ross, Chapter 7 Properties of Expectation
- Week 10: Ross, Chapter 7 (continued); Chapter 8 Limit Theorems
- Week 11: Ross, Chapter 8 (continued)
- Week 12: Ross, Chapter 8 (continued)
- Week 13: Ross, Chapter 9 Additional Topics in Probability
- Week 14: Ross Chapter 9 (continued)
- Week 15: review for final

Hunter College Policy on Academic Integrity:

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The college is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

ADA Policy: In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call: (212) 772- 4857 or (212) 650-3230.

Hunter College Policy on Sexual Misconduct: In compliance with the CUNY Policy on Sexual Mis- conduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College. a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).

b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the college's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

Changes:

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.