

Statistics 318: Elementary Probability
The Pennsylvania State University
Spring 2005

Instructor: Weixin Yao
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Office: 418 Thomas Building
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Class time: M W F 11:15A-12:05P, 104 Thomas

Office Hours: M W 3:30P-5:00P

If you are unable to meet during any of these hours, please schedule an appointment with me for an alternative time.

Grader: Mian Huang
Phone: 814-863-0692

Office: 330B Thomas Building
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Office Hours: T R 2:30-4:00

Prerequisite: Math 141 or equivalent

Required Text: *Mathematical Statistics and Data Analysis*, Second Edition, by John A. Rice

Course Coverage: My plan is to cover chapters 1 through 5 of the required textbook, including axioms of probability, conditional probability and independence, discrete and continuous random variables, joint distributions, expectation and limit theorems. The rest will be covered in Stat 319.

Attendance: Attendance to each class meeting is required and beneficial.

Homework: Selected homework assignments from the textbook will be collected in class and graded periodically on a weekly basis. No late homework will be accepted. If you happen to have an emergency, please bring your supporting documents with you when you come to see the grader or me. Missed homework will be received a grade of zero. To get full credit, you need to show all your work neatly, clearly label each problem and staple the entire assignment together in the correct order with your first and last name printed on every page.

Exams: There will be two midterms and one final. All the in-class exams are closed-book, but you are allowed to bring a double-sided cheat sheet (8.5x11). There may be a take-home part of each mid-term. No early or late exams will be given without a written and legitimate excuse, such as conflict examinations, family emergency, sickness. Students who need makeup exams should plan early and let me know at least a week ahead of time. A written notice is required.

Quizzes: There will be one in class closed book quizzes every two weeks. The quiz includes about 2 questions covering the last two weeks lecture notes. The quiz starts at the beginning of the class and ends in about 10 minutes. There may be 7 quizzes in total. I will only count the highest 5 grades.

Grading:

Homework:	30%	
Quiz:	5%	Once every two weeks
Mid-term 1:	20%	Friday, Feb 18, 11:15A-12:05P, 104 Thomas
Mid-term 2:	20%	Wednesday, Mar 30, 11:15A-12:05P, 104 Thomas
Final:	25%	TBA
Total:	100%	

Academic Integrity: <http://www.science.psu.edu/academic/Integrity/index.html>

Schedule of Class Meetings

This is a rough sketch of what we will be covering during this Spring 2005 semester. Modifications may occur due to severe weather conditions or sickness.

Week 1	JAN 10, 12, 14	Chapter 1: Sections 1.1, 1.2, 1.3 Introduction; Sample Spaces; Probability Measures.
Week 2	JAN 17, 19, 21	Sections 1.4, 1.5, 1.6 Counting Methods; Conditional probability; Independence.
Week 3	JAN 24, 26, 28	Chapter 2: Section 2.1 Discrete Random Variables: Bernoulli, Binomial, Geometric, Poisson.
Week 4	JAN 31 FEB 2, 4	Section 2.2 Continuous Random Variables: Exponential, Gamma, Normal.
Week 5	FEB 7, 9, 11	Section 2.3 Functions of a Random Variable.
Week 6	FEB 14, 16, 18	Chapter 3: Section 3.1 Review for midterm #1. Midterm #1, bring one double-sided 8.5x11 formula sheet.
Week 7	FEB 21, 23, 25	Section 3.2 Bivariate Discrete Random Variables.
Week 8	FEB 28, MAR 2, 4	Section 3.3 Bivariate Continuous Random Variables.
Week 9	MAR 07 through MAR 11	Spring Break --No Class !!
	MAR 14, 16, 18	Section 3.4, 3.5 Independent Random Variables; Conditional Distributions: Discrete and Continuous cases.
		Section 3.6, 3.7

Week 10	MAR 21, 23, 25	Sums and Quotients of Jointly Distributed Random Variables; Order Statistics.
Week 11	MAR 28, 30 APR 1	Review for Midterm #2 Midterm #2, bring one double-sided 8.5x11 formula sheet. Chapter 4: Section 4.1 Expected value of random variable; Expectation of Linear Combinations of Random Variables;
Week 12	APR 4, 6, 8	Sections 4.2, 4.3 Variance and Standard Deviation Covariance & Correlation;
Week 13	APR 11, 13, 15	Section 4.4, 4.5 Conditional Expectation. MGF (Moment-Generating Functions).
Week 14	APR 18, 20, 22	Chapter 5: Sections 5.1, 5.2 An introduction to Limit Theorems; WLLN (Weak Law of Large Numbers).
Week 15	APR 25, 27 29	Section 5.3 Convergence in Distribution and CLT (Central Limit Theorem). The Last Day of Class will be on 04/29/05: Review for the Final Exam.
Week 16 Exam Week	MAY 02 through MAY 06,	The Comprehensive Final Exam will be tentatively on MONDAY 05/02/05 (Time and Place: TBA).

Important University Course Administration Dates:

Please note that as a student registered for this course, you are responsible for taking care of certain administrative details before the following university-wide deadlines:

Drop/Add Period	Monday - Wednesday	January 10 - January 19
Final Exam Conflict Filing Period	Monday - Sunday	February 7 - February 20
Late Drop Deadline	Friday	April 8
Withdrawal Deadline	Friday	April 29