Fall 2025 MATH-M463 Course Syllabus
Introduction to Probability Theory (3 cr) (Online)

Textbook: *Mathematical Statistics with Applications, 7th Ed.* , by *Wackerly, Mendenhall, and Scheaffer*

Instructor: Dr. Zhong Guan. Office: NS325, zguan@iu.edu , Phone: 520-4430

Office hours: TR: 8:00a -11:00a and by appointment(on Zoom).

Course Description and Prerequisites: Counting techniques, the meaning of probability. Random experiments, conditional probability, independence. Random variables, expected values and standard deviations, moment generating functions, important discrete and continuous distributions. Poisson processes. Multivariate distributions, basic limit laws such as the central limit theorem. C: MATH-M 311.

Technology: R programming and RStudio will be introduced.
Download R at: http://cran.r-project.org/;
Download RStudio at: https://www.rstudio.com/products/rstudio/download/.

Evaluations/Rules:

1) You are strongly suggested to do all assignments and turn them in on time. Success in this class requires a lot of practice on homework problems. You are encouraged to discuss exercise problems with math tutors, your classmates and the instructor. No late homework is accepted after the deadline. *Two* lowest homework grades will be dropped.

2) There will be five (5) quizzes, two (2) midterm tests and one comprehensive final exam. Quiz problems will be similar to the homework problems and class examples. *One* lowest quiz grade will be dropped. All quizzes and exams are given on Fridays. No makeup quiz will be given.

3) Missed test and final cannot be made up without adequate justification for the absence. You must tell me before the test if you know in advance that you will have a legitimate conflict.

4) Quizzes, tests, and final exam are all open book, open notes. Calculators and Computer softwares are allowed. Only requirement is that all work must be done *without* any help from anyone else.

5) Your final grade will be determined by

	Time	Weight	Points
Homework:		20%	200 points
Quizzes:	Fridays of weeks 2, 4, 8, 11, 15.	15%	150 points
Tests:	Fridays of weeks 6, 13.	$2 \times 20 =$40%	$2 \times 2 \times 100 =$400 points
Final:	Friday of week 17	25%	$2.5 \times 100 =$250 points
Total		100%	1000 points

Grading scale: 90-100%:A, 89-89%:B, 70-79%:C, 60-69%D, 0-60%:F. Plus and minus grades may be given at upper and lower ends of each range.

Statements about Using AI Tools: In this course, it is expected that all submitted work is produced by the students themselves, whether individually or collaboratively as noted in/on the assignment directions. Students must not seek the assistance of Generative AI Tools like ChatGPT in any stage of the writing/creative process. Use of a Generative AI Tool to complete an assignment constitutes academic dishonesty.

Standard Statements: can be found at https://academics.iusb.edu/syllabus-statements/index.html.

Free face-to-face and online tutoring: For Tutoring Schedules and information about how to access services, go to the ACE website at Academic Centers for Excellence.

Learning Online at IU: Student services https://learningonline.iu.edu/academics/student-services.html.

Tentative Schedule

Week	Dates	Lecture	Quiz/Test
1	8/25–8/29	2.2–2.5	
2	9/1–9/5	2.6–2.7	(Labor Day: 9/1)Quiz 1
3	9/8–9/12	2.8–2.10	
4	9/15–9/19	3.1–3.2	Quiz 2
5	9/22–9/26	3.3–3.7	
6	9/29–10/3	Review	Test 1
7	10/6–10/10	3.8 3.9 4.2	
8	10/13–10/17	4.2–4.5	Quiz 3
9	10/20–10/24	4.6 4.7	(Fall Break: Mon + Tues)
10	10/27–10/31	4.7 4.10 5.2	(10/26: eDrop ends)
11	11/3–11/7	5.3–5.7	Quiz 4
12	11/10–11/14	5.8–5.11	
13	11/17–11/21	Review	Test 2
14	11/24–11/28	6.2–6.4	(T-Day BRK: 11/26-11/30)
15	12/1–12/5	6.5–6.7	Quiz 5
16	12/8–12/12		
17	12/15–12/19		Final Exam

Go to Canvas to check the updated schedule.

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