

Math 2621: Probability for Applications

C Term 2022 WPI

Professor: Gu Wang, Ph.D.
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Office Hours: Tuesday & Thursday 1:00 pm – 2:00 pm, Stratton Hall 305D
<https://wpi.zoom.us/j/5217022127> (by appointment)

TA: Shuaichuan Feng, sfeng2@wpi.edu, CD07, CD08
Office Hours: Monday & Wednesday 4:00 pm – 5:00 pm, Stratton Hall 204
Frederick Miller, fimiller@wpi.edu, CD09
Office Hours: Monday 11:00 am – 12:00 pm, Thursday 2:00 pm – 3:00 pm, Stratton Hall 014
Cheng-Hsuan Jan, cjan@wpi.edu, CD12
Office Hours: Tuesday & Friday, 4:00 pm – 5:00 pm, Stratton Hall 014

Lectures: Monday, Tuesday, Thursday & Friday, 12:00 pm – 12:50 pm, Atwater Kent 116 Newell Hall

The course website is on Canvas. It contains the syllabus (this document), lecture notes, assignments, announcements, and other course materials. You are responsible for knowing the information in the materials that appear there.

Significant Weather/COVID Event: In case the campus is closed or travel is difficult because of big snow, or the professor is unable to give lecture in person due to COVID related reason, lecture videos will be posted online and the professor would send out an email confirmation in the early morning.

Overview: Chapters 1, 2, 3 of *Probability with Applications in Engineering, Science and Technology* (second edition 2017, electronic copy available at WPI library) will be covered. Basic probability theory: set algebra, marginal probability, conditional and total probability, Bayes' Rule, independence, and counting. Discrete random variables (Binomial, Geometric, and Poisson). Probability mass functions and moments (expectation and variance). Continuous random variables (Normal), Probability density functions and cumulative distribution functions. Derived and multivariate distributions. Limit theorems: law of large numbers, and central limit theorem.

Grading: The final grades will be computed using:

Homework	30%
Midterm Exam	30%
Final Exam (cumulative)	40%

Exams: 02/04/2022 Midterm Exam, **In Class**
03/04/2022 Final Exam, **In Class**

The exams are closed book, no calculator is allowed. You are allowed to bring one simple "cheat sheet" (a letter size paper on which you can write on both sides whatever you like, as

long as it is handwritten) for each exam.

Make-up for the midterm and final exams will only be allowed for medical reasons or in the event of emergencies or a WPI formal activity that is brought to my attention at the beginning of the course.

Total scores and the guaranteed letter grades: 90% (A), 80% (B), 60% (C).

Homework: The **lowest** of the homework grades will be dropped in final grade calculation.

Homework will be posted on Canvas on Fridays and due on the following Friday. Please upload it as .pdf document on Canvas.

You are allowed to work together on homework assignments, but your solutions must be written up independently. Step-by-step solutions should not match other papers.

Your solution should contain not only the result, but carefully developed calculations that can be followed by the reader.

Late assignments without prior consent of the professor will not be accepted and will receive a grade of zero. Extensions will be granted only in the event of emergencies or extenuating situations that you discuss with the professor in advance.

ARC Tutoring Center: Peer tutoring and Math and Science Help (MASH) will be offered in a virtual (Zoom) format by the Academic Resources Center (ARC) tutors at the beginning of C term. We hope to move back to in-person tutoring after the first couple of weeks of the term. Individual tutoring will be available from 10am-9pm Monday through Thursday and 10am-5pm Friday. Students should use tutortrac.wpi.edu to sign up for individual tutoring appointments that fit their schedule. Tutors will send students a Zoom link via email before the session begins. No appointments are needed for MASH. Should a student have a time conflict or be looking for a tutor and there is limited availability, please reach out to the Academic Resources Center (arc@wpi.edu) or submit availability at [Bit.ly/ARCTutor](https://bit.ly/ARCTutor) in order to request additional tutoring that best aligns with their schedule. C Term 2022 ARC Services (MASH & Tutoring) begin on Friday, January 14th and end on Wednesday, March 2nd. There will be no tutoring on January 17th, February 24th, or February 25th. Further instructions on how to access MASH and tutoring offered by the ARC are located on the Academic Resources Center Canvas Page and on the Academic Advising and Academic Resources Center WPI Webpages.

Tutors for topics in probability: Andrew Kerekon, Veronica Melican, Mira Plante, Michael Zeolla, Cather Zhang

Academic Honesty: Each student is expected to familiarize him/herself with WPI's Academic Honesty policies, which can be found at <https://www.wpi.edu/about/policies/academic-integrity/dishonesty>

All acts of fabrication, plagiarism, cheating, and facilitation will be prosecuted according to The university's policy. If you are ever unsure as to whether your intended actions are considered academically honest or not, please contact the professor.

Accessibility Services: If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment as soon as possible. If you have not already done so, students with disabilities, who believe

that they may need accommodations in this class, are encouraged to contact the Office of Accessibility Services (OAS), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The OAS phone number is (508) 831-4908, and its email is accessibilityservices@wpi.edu.

Please feel free to let me know of any personal difficulties you are experiencing. The WPI Student Development and Counseling Office is a recommended resource for help. Its email is sdcc@wpi.edu or phone 508-831-5540.

This syllabus is subject to change at the professor's discretion.