

SIE 500A Probability and Statistics

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Prerequisites: Calculus + SIE 305 : Introduction to Engineering Probability and Statistics

Textbook: Probability and Statistics for Engineering and the Sciences by Jay L. Devore

Catalog Description: SIE 500a : Probability and Statistics. Basic probability, random variable and probability distribution, mathematical expectation, special probability distribution.

Course learning outcomes: SIE 500 is intended to lay the foundation for successful matriculation through any of the graduate programs offered primarily through the SIE department at the UA. SIE500a is an introduction to the mathematical representation of uncertainty using probability theory. Upon completion of SIE500a, the students will be able to use basic probability correctly. Understand when and how to use discrete and continuous probability models in univariate context.

Homework: The homework will come with each of the topics indicated. As you work your way through the course, you will be assigned encounter homework questions. You are expected to provide your answer to the questions. These will be used to assess your “class participation”. Your grade for the course will be based on each of these pieces.

Grading: Topics in this class and the anticipated effort level include.

Academic Integrity Policy: Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, homework, and exams must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity: <http://dos.web.arizona.edu/uapolicies/>. Any violation of the academic integrity code will be dealt with using the procedures detailed in the code.

Course Outline:

- Basic Probability
- Random Variables and Probability Distributions
- Mathematical Expectation
- Special Probability Distributions

Inclusive Excellence Statements

This course supports elective gender pronoun use and self-identification; rosters indicating such choices will be updated throughout the semester, upon student request. As the course includes group work and in-class discussion, it is vitally

important for us to create an educational environment of inclusion and mutual respect. (NOTE: You can download your class roster from UAccess)

Inclusive Excellence is a fundamental part of the University of Arizona's strategic plan and culture. As part of this initiative, the institution embraces and practices diversity and inclusiveness. These values are expected, respected and welcomed in this course.

Use of Generative AI

This course is designed to build your original thinking, writing, and problem-solving skills, and using generative AI tools to replace this work would interfere with your learning. Therefore, using generative AI to complete graded assignments in this course will be considered a violation of the [Code of Academic Integrity](#), specifically the prohibition against submitting work that is not your own. If you have any questions or want to talk about using AI, please contact your instructor.