STAT 1151: INTRODUCTION TO PROBABILITY

Fall 2023 Course Syllabus

Course Information

Section 1: Monday 8:15-11:00 am, Room 3-106
Section 2: Tuesday 8:15-11:00 am, Room 3-106

Credit: 3

Instructor

Dr. Xiaomei Tan
Email: xiaomei.tan@scupi.cn
Office: 3-317B
Office Hours: Thursday 1:30-4:30 pm, Friday 9:00 am-12:00 pm
Contact instructor:

- Attend office hour or via email
- Extra office hours will be offered by appointment.

Teaching Assistants

Xinyi Yan (Section 1)
Email: 2243363885@qq.com

Qingyue Deng (Section 2)
Email: 2020141520203@stu.scu.edu.cn

TA Responsibilities: TAs primarily support the instructor across a range of tasks, including grading homework and in-class quizzes, addressing student inquires, and contributing to the smooth functioning of educational environments.
Contact TAs: QQ Group (see QR code on last page) or via email

Note:

- Modifications to this syllabus may occur. Please stay informed about any revisions announced during class or on the Blackboard website. Lecture materials, reading lists, grading details, and announcements will all be accessible through Blackboard.
- Important dates and information will be announced during class. Students should stay informed about announcements on Blackboard and via emails sent to their SCU email address.
- While emailing the instructor or TAs, please kindly include **"STAT 1151"** in the subject line for efficient communication. Please use your university email account (student_ID_number@stu.scu.edu.cn), as emails from other sources could be caught by the SCU spam filter.

Course Description

Introduction to Probability is designed to equip students with a comprehensive understanding of fundamental concepts of probability. This course presents at both theoretical and applied level to introduce the basic probability concepts required for statistical inference. The course serves as a steppingstone for further studies in statistics, data science, and various fields that rely on probabilistic reasoning. By the end of the class, students will possess a foundation in probability theory, enabling them to approach complex problems with a systematic and probabilistic mindset.

Course Objectives

Upon completion of this course, students should be able to

- understand fundamental concepts, tools, and methodologies of probability.
- apply probability theory in various real-life situations and make informed decisions.

Textbook

Walpole R. E., Myers R. H., Myers S. L., & Ye K. (2012). *Probability & Statistics for Engineers & Scientists* (9th ed.). Prentice Hall. (Available on Blackboard)

Grading

- Midterm exam: 30%
- Final exam: 40%
- Homework: 20%
- In-class quizzes: 10%

Course grades are assigned based on a 100-point scale. The numerical equivalence to letter grades is as follows:

Total Scores	Grades	Total Scores	Grades
>=90	A	>=70	C+
>=85	A-	>=66	C
>=80	B+	>=63	C-
>=76	B	>=60	D
>=73	B-	Below 60	F

*Round up policy: For example, if you get a final score of 89.5, we will round it up to 90. If you get 89.4 unfortunately, we are not able to round it up to 90. We keep this rule the across all students.

Homework

[Due] Homework assignments will be distributed periodically throughout the semester and will be due at the start of the subsequent class, usually due on 8:15 AM. **Late homework will NOT be accepted**, unless certified medical proof is given. It is advised that assignments be submitted in advance of the designated deadline to avoid any potential lateness. It is the students' responsibility to ensure **accurate and timely submission**.

[Submission] Each assignment must be submitted in **one PDF format file through the Blackboard**. Please also answer the problems **according to the order of problems assigned**. (Notes: The homework can be typed or handwritten to take photos. The HW done on iPad can be

directly generated by the software to generate PDF files, and the handwritten work can be merged to generate PDF as well.)

[Naming Format] Student ID Name. (Example: 2020141520203邓晴月)

[Grading Criteria] The full score of each assignment is 100 points. Five points will be lost if you fail to submit it in the correct format and order of the problems. Extra points will be lost if you miss answering problems.

[HW Solution] Generally speaking, the HW solution will be posted both on Blackboard and QQ group on the second day of the deadline.

Exams

Exams and quizzes are scheduled following the course timetable. They will be conducted under **closed-book, closed-notes** conditions**.** During exams and quizzes, students are allowed to bring a single A4-sized page, with content handwritten on both sides.

Attendance for exams and quizzes is mandatory. In case of foreseeable absences, it is the students' responsibility to inform the instructor **one week prior to the event** and provide **written verification** of the reason for missing the event. For unforeseen emergencies, it is the students' responsibility to provide written verification **within one week after the event**. Makeup exams or quizzes will be arranged as needed. Failure to give prior notice for an absence will result in a "**ZERO**" score, except in exceptional cases.

Class Policy

1. Class participation

Regular class attendance as well as active participation in course activities is expected. It is the students' responsibility to complete all assigned in-class tasks. Any required student absences should be reported to the instructor in advance via email or if not possible in advance, shortly thereafter.

2. Academic integrity

Academic integrity is the pursuit of scholarly activity in an open, honest, and responsible manner. In this course, students are expected to uphold the dignity, rights, and property of their peers. All exam work and homework must be a product of individual effort. **Any violation of academic integrity, including uncredited copying or closely paraphrasing others' work, as well as exam cheating, will not be tolerated.** The minimum penalty for academic dishonesty is a one-letter grade deduction.

Tentative Course Schedule (Aug 28, 2023)

Week	Date	Topic
1	9/4 9/5	Probability (2.1-2.4)
2	9/11 9/12	Probability (2.5-2.7)
3	9/18 9/19	Random Variables and Probability Distributions (3.1-3.3)
4	9/25 9/26	Random Variables and Probability Distributions (3.4)
5	10/2 10/3	National Day Holiday (No class)
6	10/9 10/10	Mathematical Expectation (4.1, 4.2)
7	10/16 10/17	Review
8	10/23 10/24 TBD	Midterm Exam
9	10/30 10/31	Mathematical Expectation (4.3, 4.4)
10	11/6 11/7	Some Discrete Probability Distributions (5.1-5.3)
11	11/13 11/14	Some Discrete Probability Distributions (5.4, 5.5)
12	11/20 11/21	Some Continuous Probability Distributions (6.1-6.4)
13	11/27 11/28	Some Continuous Probability Distributions (6.5-6.7)
14	12/4 12/5	Some Continuous Probability Distributions (6.8-6.10)
15	12/11 12/12	Functions of Random Variables (7.1-7.3)
16	12/18 12/19	Multivariate discrete distribution
17	12/25 12/26	Marginal and conditional distribution and independent variables
18	1/1 1/2	Review
19	1/8 1/9 TBD	Final Exam
20	1/15 1/16	

Sections 1&2: