Course Syllabus
Spring 2023
CS-SE-STAT 3341.501
Probability and Statistics in Computer Science and Software Engineering

Time and location: 5:30 pm to 6:45 pm Monday and Wednesday ECSS 2.410.

Instructor	Grader
Dr. Huizhen Guo Huizhen.guo@utdallas.edu (please include the course # and section # when emailing me) FN3.118B (Do not use the entrance of FN3.118. It has its own entrance from the corridor) Office Hours: Tue & Thur 3 pm – 4 pm or by appointment.	

Computational and graphing tool

- TI 83/84 is required for homework, quizzes, and exams. The instructor will provide instructions and demonstrate use of the tool. It is ok to use other tools such as Excel and MatLab, however students are responsible for learning the tools of their choice.

Course Material

- Probability and Statistics for Computer Scientists, 2ed, Michael Baron. ISBN: 978-1-4398-7590-2. Free e-book is available: UT Dallas library webpage > Databases > click letter "O" > click O'Reilly Online Learning > login > searching the textbook.

Required Supplies

- SCANTRONS, form F-1712-PAR-L (one for each exam; you will also need a no.2 pencil and a good eraser)

Homework

There will be 12 Homework sets which will be posted on eLearning and completed outside class. Students may submit a hard copy in the class or scan their work into a PDF file and submit through the link within eLearning. Three problems from each set will be selected for grading. The homework average will be obtained by dropping the lowest two scores and averaging the remaining scores. Solutions to Homework will be posted after the due date (This is one of the reasons that late homework is not accepted). Adobe Scan is a free and good phone/tablet App that can be used to scan your homework.

Quizzes

There will be 11 quizzes which will be created within eLearning and graded automatically. The link is available until midnight Friday. The quiz average will be obtained by dropping the two lowest quiz scores and averaging the remaining quiz scores.

Exams are held on these Wednesdays:
February 20 April 3 May 3

Grade Distribution

20% Homework
20% Quizzes
20% Exam 1
20% Exam 2

A+: [97, ∞) A: [93, 97) A-: [90, 93)
B+: [87, 90) B: [83, 87) B-: [80, 83)
C+: [77, 80) C: [73, 77) C-: [70, 73)
D+ [67, 70) D: [63, 67) D-: [60, 63)

20% Exam 3	F: [0, 60) To keep grading fair, no rounding and no honoring special requests.

Tentative Course Outline

Week	Mon		Wed		Fri
1	1/16	MLK Day	1/18	Introduction, Syllabus, Ch 2 Probability	1/21
2	1/23	Ch 2 Probability	1/25	Ch 2 Probability Quiz 1 HW 1 (ch 2) due	1/28
3	1/30	Ch 2 Probability	2/1	Ch 2 Probability Quiz 2 HW 2 (ch2) due	2/4
4	2/6	Ch2/Ch 3 Discrete Probability	2/8	Ch 3 Discrete Prob Quiz 3 HW 3 (ch 2) due	2/11
5	2/13	Ch 3/Ch4	2/15	Ch 4 Quiz 4 HW 4 (ch 3) due	2/18
6	2/20	Exam 1 ch 2, ch 3	2/22	Ch 4 Continuous Probability	2/25
7	2/27	Ch4	3/1	Ch 4 Quiz 5 HW5 (ch4, general, Gamma)	3/4
8	3/6	Ch 6	3/8	Ch 6 Stochastic Process Quiz 6 HW 6 (ch 4, normal, CLT) due 3/13	3/11
9	3/13	Spring break	3/15	Spring break	3/18
10	3/20	Ch 6	3/22	Ch 6 Quiz 7 HW 7 (ch 6) due	3/25
11	3/27	Ch 6	3/29	Ch 8 Descriptive Stat Quiz 8 HW 8 (ch 6) due	4/1
12	4/3	Exam2 ch 4, ch 6	4/5	Ch 9 Inferential Stat	4/8
13	4/10	Ch 9	4/12	Ch 9 Quiz 9 HW 9 (ch 8, ch 9) due	4/15

14	4/17	Ch 9	4/19	Ch 9 Quiz 10 HW 10 (ch 9) due	4/22
15	4/24	Ch 11 Regression	4/26	Ch 11 Quiz 11 HW 11 (ch 9) due	4/29
16	5/1	HW 12 (ch 11)	5/3	Exam 3 ch 8, ch9, ch 11	5/6
17	5/9		5/11		5/13

List of Topics
Ch.2 Probability (classic)
Ch.3 Discrete Random Variables and Their Distributions
Ch.4 Continuous Distributions
Ch.6 Stochastic Processes
Ch.8 Introduction to Statistics (descriptive statistics)
Ch.9 Statistical Inference I (point estimate, interval estimate, hypothesis tests)
Ch.10 Statistical Inference II

Instructor Policies

- For any questions or concerns about the course, including the requirements, the topics, the problems, and so on, please visit and/or email the instructor.
- Email me your questions, or email to request an office appointment. I am happy to discuss and answer your questions.

Classroom Policies

- Please raise your hand to ask questions and participate during class.
- Silence devices and do not have side conversations.
- Do not leave class early, except for emergencies.
- In general, be polite and courteous to everyone.

Grading Policies

- There are no make-ups or individual extensions of any homework for any reason.
- There are no make-ups or retakes of exams. However, in the event of an emergency, notify the instructor as soon as possible (by email or in person or both).
- To treat all students fairly, please do not request special projects, extra credit, rounded scores, or any other special treatment. These requests will be ignored.

Learning Objectives

- Learn the basic probability rules and concepts, how to apply them, and when they don't apply
- Understand probability distributions and use them to answer probability questions
- Relate calculus to probability and use calculus to solve some probability problems
- Learn the basics of Markov chains and how to use matrices for finite-state chains
- Have an introduction to classical statistical inference (confidence intervals, hypothesis tests) and to how calculus may be used (parameter estimation)

UTDallas Syllabus for General Policies and Procedures:
The information contained in the following link constitutes the university's policies and

procedures segment of the course syllabus.
https://go.utdallas.edu/syllabus-policies