Course Syllabus for CS/SE/STAT 3341
Fall 2017

Instructor information:

Dr. Tristan Whalen

Email: tristan.whalen@utdallas.edu

Office: FN 2.206

Office hours:

Tues/Thur 10am-11am

By appointment: email me and we can set up a time

Class location and times:

Section	Days	Time	Room	Teaching Assistant	Contact
501	M/W	5:30pm – 6:45pm	GR 3.420	Akash Roy	Akash.Roy@utdallas.edu
002	T/Th	8:30am – 9:45am	GR 3.420	Marwah Soliman	Marwah.Soliman@utdallas.edu
001	T/Th	11:30am – 12:45pm	ECSS 2.305	Zachary Coleman	Zachary.Coleman@utdallas.edu

Course prerequisites:

Calculus II (MATH 1326 or MATH 2414 or MATH 2419), and
Discrete Math (CE/CS/TE 2305), C or better

Grading:

25% Quiz average

75% Exams:

    Equally weighted, or

    20%+27.5%+27.5%, with your worst worth 20%

    (whichever is best for you)

A+: [97, 100], 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)
F: [0, 60)
No rounding: a 79.98 is a C+

Required materials:

- **Textbook:** *Probability and Statistics for Computer Scientists*, M. Baron, Chapman & Hall/CRC Press (2014), Second Edition ISBN 9781439875902
- **Scientific Calculator:** A basic or scientific calculator is required for some problems and is permitted on all assignments for basic arithmetic, fractions, exponentials, logarithms, and square roots. You are not allowed a graphing or stat calculator.
- **Computer and internet access:** for course materials in elearning and announcements

Quizzes:

Quizzes will be given on most Wednesdays/Thursdays in class.
There are no make-ups of quizzes, so everyone's lowest quiz grade is dropped—the dropped quiz is to make up for personal/family/medical/etc. emergencies, not to make up for a bad grade.

Exams:

There are three exams that will be held in class on the following dates (on the date your section meets).

    Exam 1: Sept 27/28 (Wed/Thur)   Exam 2: Oct 25/26 (Wed/Thur)   Exam 3: Dec 5/6 (Tues/Wed)

Do not miss an exam! Make-up exams will be given only for extraordinary circumstances. You must take the exam during the section you registered for. There is not a final exam for this course.

Tentative Schedule*

Week Start	Lesson Plan
Aug 21	01. Probability Basics
Aug 28	02. Bayes' Rule and Friends
Sept 4	03. Discrete Random Variables and Distributions
Sept 11	04. Families of Discrete Distributions
Sept 18	05. Probability Density
Sept 25	WEEK OF EXAM 1 (L1-L5)
Oct 2	06. Continuous Distributions
Oct 9	07. Stochastic Processes that Count
Oct 16	08. Stochastic Processes that are Markov
Oct 23	WEEK OF EXAM 2 (L6-L8)
Oct 30	09. Correlation and Linear Regression
Nov 6	10. Normal Approximation (The Central Limit Theorem)
Nov 13	11. Estimating Error with Confidence! (Confidence Intervals)
	12. To Reject or Not to Reject (Hypothesis Testing)
Nov 20	THANKSGIVING BREAK WEEK
Nov 27	13. Calculus-based Parameter Estimation Methods
Dec 4	WEEK OF EXAM 3 (L9-L13)

***Lesson and week schedule us approximate. The instructor may change the schedule if necessary.**

Classroom policies:

- Be polite and courteous to everyone. Do not have side conversations. Silence your devices.
- Please raise your hand to ask a question or give answers. Participate!
- Do not leave class early (this is very distracting) except for emergencies.
- Using a mobile device (smartphone, laptop, etc.), except for note-taking, is very distracting. I may ask you to put away your device or leave.

Assignment and grade policies:

- If you miss a quiz, you will be given a score of 0 for that quiz. There are no make-ups of quizzes. Your lowest quiz grade is dropped to account for an emergency.
- There are no make-ups of exams unless the circumstances are extraordinary.
- To treat all students fairly, individual requests for special projects, extra assignments, extra tests, rounded scores, and so on, will neither be considered nor granted.

Coursebook description:

Axiomatic probability theory, independence, conditional probability. Discrete and continuous random variables, special distributions of importance to CS/SE and expectation, Central Limit Theorem. Introduction to stochastic processes. Illustrative examples and simulation exercises from queuing, reliability, and other CS/SE applications. Basic statistical inference, parameter estimation, hypothesis testing, and linear regression.

Learning objectives:

Students will learn:

1. Fundamental probability rules and how to apply them
2. Basic probability distributions or models most commonly used in computer science
3. Introductory stochastic processes, such as Markov chains, relevant to computer science
4. First concepts in statistical inference (confidence intervals, hypothesis testing)
5. Introduction to additional statistical tools (linear regression and parameter estimation methods)

The content of this syllabus may change at the discretion of the instructor.

UT Dallas syllabus policies and procedures:

The information contained in the following link constitutes the university's policies and procedures segment of the course syllabus.

http://go.utdallas.edu/syllabus-policies