UTSA College of Science
Department of Computer Science
Spring 2024 Course Syllabus

CS 3333: Math Foundations of CS

INSTRUCTOR: Amin Sahba

COURSE MODALITY: MWF 2:00 PM to 2:50 PM, (MH 3.03.18)

E-Mail: amin.sahba@utsa.edu Office: NPB 3.316
Office Hours: MWF 12 - 12:50 PM (or by appointment)
Online Office Hours: MWF 1 - 1:50 PM by appointment

RECOMMENDED TEXTBOOK:

- K. Rosen, Discrete Mathematics and Its Applications, 8th edition, McGraw-Hill 2019.
- Linear Algebra by Jim Hefferon, 4th edition (free online).

  http://joshua.smcvt.edu/linearalgebra/book.pdf

- Spiegel, Schiller and Srinivasan, Schaum's Outline of Probability and Statistics (Schaum's Outline Series), McGraw-Hill, 2008.

  http://online.kottakkalfarookcollege.edu.in:8001/jspui/bitstream/123456789/1718/1/Schaum%27s%20Outlines%20of%20Probability%20and%20Statistics.pdf

COMMUNICATIONS: I will use Canvas to communicate with the class as a whole.My preferred method for students to contact me (other than during office hours) is throughemail. **Please include your course (CS 3333-004) in the subject line of all emails.** If you email me through Canvas, this happens automatically.

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PREREQUISITES/CO-REQUISITES: CS 1714 Computer Programming II, and Math 1224 Calculus II.

COURSE DESCRIPTION: This course is primarily designed for undergraduate students in Computer Science. It is a survey and development of mathematical and statistical tools suitable for describing algorithmic applications. It introduces and reviews several mathematical concepts (e.g. vectors, matrices,

combinatorics, permutations, probability and statistical models) that are useful in the design and analysis of computer algorithms and in the development of system performance models. Credit hours: 3

COURSE OBJECTIVES:

- Students will learn to formalize arguments and write proofs.
- Students will demonstrate proficiency with the required mathematical concepts.
- Students will demonstrate proficiency with analysis of mathematical problems.
- Students will develop the algorithms to solve the mathematical problems.
- Students will apply the mathematical concepts and methods to solve real-world problems.

COURSE POLICIES:

1. *Course materials:* Main content will be posted to Canvas.

2. *Messages:* Check announcements and mail on your CANVAS ACCOUNT on a regular basis. I will send notice of any changes, updates, and other important information to you through announcements or email on your Canvas account. You are responsible for any changes or updates sent to you by email or posted on our Canvas site.

3. *Late Work and Make-up Policy:* Late work is allowed under some circumstances [Only if you have university-sanctioned excuse/Medical Emergency] and with prior approval from the instructor. Documentation must be required. Make-up exam is allowed under some circumstances [Only if you have university-sanctioned excuse/Medical Emergency] and with prior approval from the instructor. Documentation must be required.

4. *Academic Integrity:* The rules and regulations of the Texas State Board of Regents and UTSA govern scholastic misconduct and dishonesty are strictly enforced. They apply to all course work submitted. FOR NON-ORIGINAL WORK – Penalties will be assessed on all work that is partially or wholly attributable to another person. There is a zero-tolerance policy in effect in this course with respect to any instance of scholastic dishonesty. Offenses can be elevated to Community Standards.

5. *University Honor Code:* All students will comply with the UTSA Honor Code.

GRADING POLICY:

Activity	Percentage
Quizzes	20%
Homework	25%
Exam 1	15%
Exam 2	15%
Final Exam	25%
Total	100%

There may be some in-class activities as 5% extra credit.

Numeric Grade	Letter Grade
≥ 97	A+
93 – 96	A
90 – 92	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
67 – 69	D+
63 – 66	D
60 – 62	D-
< 60	F

ADDITIONAL UNIVERSITY POLICIES: The Provost Office publishes a website including additional information for students. The site address is *http://provost.utsa.edu/syllabus.asp*. Everything included on that site is officially a part of this syllabus. I strongly recommendthat you become familiar with the material provided there.