CSE 2315: Discrete Structures
Fall 2022

Instructor Information

Instructor: Dr. Abhishek Santra

Email Address: abhishek.santra@uta.edu

Office Hours (on MS Teams): T/Th 11 AM to 12 PM; *Appointment sheet link available on Canvas.*

Research URL: https://itlab.uta.edu/ (For BS/MS/PhD Research Opportunities)

Teaching Assistant Information

Teaching Assistant: Mr. Harshith Kannalli Sachidananda Murthy

Email Address: hxk9874@mavs.uta.edu

Office Hours (on MS Teams): M/W 11:00 AM to 12:00 PM

Course Information

Section Information: CSE 2315-005 (Mode: ONCAMPUS)

Time and Place of Class Meetings: M/W 1:00 PM to 2:20 PM, NH 110

Description of Course Content: Propositional and predicate logic, mathematical proof techniques, sets, combinatorics, functions and relations, graphs, and graph algorithms. **Prerequisite:** C or better in CSE 1310 and C or better in MATH 1426 (or C or better in or concurrent enrollment in MATH 2425)

Objectives: This course focuses on basic and fundamental mathematical knowledge to study area of computer science. The course covers propositional logic, predicate logic, proof technique, recursion, sets, combinatorics, basic probability, relations, functions, matrices, graphs, trees, and graph algorithms.

Course Outline: The course will cover selected topics divided over 6 modules

- *Module I (Chapter 1): Formal Logic*

- *Module II (Chapter 2): Proofs, Induction, and Number Theory*

- *Module III (Chapter 3): Recursion, Recurrence Relations, and Analysis of Algorithms*

- *Module IV (Chapter 4 and 8.1): Sets, Boolean Algebra, Combinatorics, and Probability*

- *Module V (Chapter 5): Relations, Functions, and Matrices*

- *Module VI (Chapter 6 and Chapter 7): Graphs and Trees, Graph Algorithms*

Required Textbooks and Other Course Materials
- Mathematical Structures for Computer Science, Seventh Edition, by Judith L. Gersting, published by Freeman, 2014.
- Lecture slides will be posted on canvas.

Descriptions of major assignments and examinations: Course has been divided into 6 major modules. There will be 5 Tests and 1 Final Comprehensive Test. At the conclusion of each of the first 5 modules, there will be an in-class test. After the completion of all modules, there will be an in-class comprehensive test.

Grading Information

Score Break-up: The break-up of the scoring is as follows,

- **Tests [75%]:** There will be 5 module tests. Each will be weighted at *15%*

- **Final Comprehensive Test [20%]:** There will be 1 Final Comprehensive Test.

- **Homework [2%]:** There will be a preliminary homework

- **Student Team Presentation [3%]:** Students will be asked to form teams and make an in-class presentation at the end of the semester.

Grade Distribution:

- **A**: >= 90 to <= 100
- **B**: >= 75 to < 90
- **C**: >= 60 to < 75
- **D**: >= 50 to < 60
- **F**: < 50

Important Note: The exact cutoffs for each letter grade will be determined at the end of the course. The above is an initial grading proposal. The instructor reserves the right to re-distribute the percentages if deemed necessary. Class participation is important for doing well on the course. This includes visiting the Instructor and the GTA to understand the material.

Regrading: Once the grade of a homework/test/presentation is distributed, you will have 5 business days to dispute it and get it re-evaluated. No re-evaluation will be entertained after the 5 day period.

Make-up Exams: No makeup tests or exams will be given.

Expectations for Out-of-Class Study: Beyond the time required to prepare for and attend each class meeting, students enrolled in this course should expect to spend at least an additional 3 hours per week in course-related activities, including reading required materials, completing assignments, preparing for tests, etc. Meet the instructor or the TA for any doubts.

Course Schedule (Separate Sheet): Posted on Canvas as a separate document by the 1st day of classes which clearly indicates the test dates, assignments and due dates in addition to the details of material covered in each lecture. Note that class schedule, test and presentation dates are tentative. Test/HW/Presentation dates may be changed (with notice) based on the progress made in the class. The course officially ends on the day of the final exam. Class schedule will be updated if any changes are made and announced in the class. "*As the instructor for this course, I reserve the right to adjust*

this schedule in any way that serves the educational needs of the students enrolled in this course. – Abhishek Santra"

Institutional Information

UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the Institutional Information page (https://resources.uta.edu/provost/course-related-info/institutional-policies.php) which includes the following policies among others:
- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

> *I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

> *I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

The outcome of any cheating, plagiarism or collusion on the test/hw will be an automatic Fail grade (F) in the course. For team presentations, all members of the team will receive the same grade/penalty; so choose your partner wisely and make sure you are aware of what your partner is doing!

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Also, switch on the notifications on Canvas to stay up to date with all the activities, especially to receive the Canvas announcements.

The students are requested to **CC the instructor and the TA(s) in every email**. The subject line of the email must be according to the template **[<CourseNumber>-<SectionNumber] <Query>.** *Example: [CSE2315-005] Request for Appointment.* Only emails that meet the above requirements will receive a response.

Additional Information

Face Covering Policy: *While the use of face coverings on campus is no longer mandatory, all students and instructional staff are strongly encouraged to wear face coverings while they are on campus. This is particularly true inside buildings and within classrooms and labs where social*

distancing is not possible due to limited space. If a student needs accommodations to ensure social distancing in the classroom due to being at high risk they are encouraged to work directly with the Student Access and Resource Center to assist in these accommodations. If students need masks, they may obtain them at the Central Library, the E.H. Hereford University Center's front desk or in their department.

Attendance: At the University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I will take attendance in the class sporadically. However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report must the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

Emergency Exit Procedures: Should we experience an emergency event that requires evacuation of the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, do not take an elevator but use the stairwells instead. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Students are encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at Emergency Communication System.

Academic Success Center: The Academic Success Center (ASC) includes a variety of resources and services to help you maximize your learning and succeed as a student at the University of Texas at Arlington. ASC services include supplemental instruction, peer-led team learning, tutoring, mentoring and TRIO SSS. Academic Success Center services are provided at no additional cost to UTA students. For additional information visit: Academic Success Center. To request disability accommodations for tutoring, please complete this form.

The IDEAS Center (https://www.uta.edu/ideas/) **(**2nd Floor of Central Library) offers **FREE** tutoring and mentoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

Emergency Phone Numbers

Enter the UTA Police Department's emergency phone number into your own mobile phone. In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

Research or General Library Help
Ask for Help
- [Academic Plaza Consultation Services](library.uta.edu/academic-plaza) (library.uta.edu/academic-plaza)
- [Ask Us](ask.uta.edu/) (ask.uta.edu/)
- [Research Coaches](http://libguides.uta.edu/researchcoach) (http://libguides.uta.edu/researchcoach)

Resources
- [Library Tutorials](library.uta.edu/how-to) (library.uta.edu/how-to)
- [Subject and Course Research Guides](libguides.uta.edu) (libguides.uta.edu)
- [Librarians by Subject](library.uta.edu/subject-librarians) (library.uta.edu/subject-librarians)
- [A to Z List of Library Databases](libguides.uta.edu/az.php) (libguides.uta.edu/az.php)
- [Course Reserves](https://uta.summon.serialssolutions.com/#!/course_reserves) (https://uta.summon.serialssolutions.com/#!/course_reserves)
- [Study Room Reservations](openroom.uta.edu/) (openroom.uta.edu/)