

CSCE 5150 — Algorithm Analysis SPRING2016

Textbook

Required Book: Introduction to Algorithms, by Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stien (MIT Press, Third Edition). Some supplementary materials will also be provided, as needed.

Instructor

Dr. Farhad Shahrokhi, Professor of Computer Science, F276 Discovery Park, farhad@cs.unt.edu, Office hours:TBA

Course Content

This is a first graduate course in the design and analysis of algorithms. The course will focus on theoretical aspects of algorithms and correctness proofs, standard design strategies, and the topics listed below.

Topics and Suggested Reading

Worst Case Analysis and Growth of Functions (Chapters 1,2, 3)

Recurrence Relations (Chapter 4)

Divide and Conquer (Chapter 4)

Lower Bounds (Chapter 8)

Greedy Algorithms (Chapter 16)

Dynamic Programming (Chapter 15)

Graph Algorithms and Network Flows (Chapters 23,24,25, 26)

Approximation Algorithms for NP hard problems (Chapter 35)

Introduction to Linear Programming (Chapter 29:tentative)

COURSE POLICIES

Grading Policy: Exam 1(35 percent), Final(35 percent), Homework+Pop quizzes(30 percent). The value of pop quizzes will not be more than 5 percent. If no pop quiz is given, then the Homework will be counted as 30 percent. The students should anticipate about 6 homework sets in this course. When appropriate the instructor will provide in class hints concerning some homework problems. The date for the final exam is determined by the University. The date for the first exam will be announced to students at least one week ahead of time.

Prerequisite is CSCE 4110, or equivalent. Students who do not have the prerequisites are discouraged to take the course. Class attendance is important, and is encouraged. Class attendance can help students to perform well in the tests. Students who miss two classes without informing the instructor of valid reasons may be dropped from the class. Solutions to some selected homework problems (but not all) will be posted. Course contents and topics may slightly vary at the instructor's discretion.

Academic Integrity Standards in this course are consistent with UNT policy: STUDENT STANDARDS OF ACADEMIC INTEGRITY (18.1.16), or other related/existing policies. The work that you turn in to be graded, including any underlying ideas, must be your own individual work. Usage of unauthorized material and sources, or depending on any unauthorized assistance, to answer homework problems, tests questions, writing reports, or carrying any type of assignment, etc., without the permission of the instructor, or without complete and accurate and complete attribution/citations of the source, when applicable, is viewed as an academic misconduct. If you have any doubts if you have specific questions feel free to ask the instructor.

Disabilities Accommodation

The University of North Texas complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. The University of North Texas provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation at 940-565-4323 during the first week of class.

Acceptable Student Behavior

Student behavior that interferes with an instructors ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student

Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at www.unt.edu/csrr

Usage of cell phones, earphones, and other electronic devices, or recording the lectures are not allowed. usage of laptops, and tablets are permitted for class purposes, only after obtaining a permission from the instructor. Usage of classrooms computers, if any, are not allowed, while the class is in session. Any student who will use an unauthorized device will loose 1 point (out of 100) and may be asked leave the classroom.