

CSE310 Data Structures and Algorithms

Syllabus – Spring 2022

Instructor

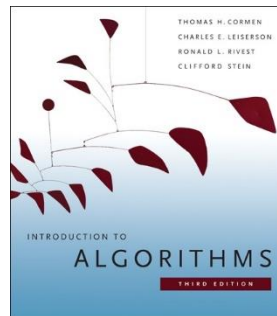
Dr. Xuerong (Sherry) Feng
Office: Brickyard 512 (5th floor)
Email: xuerong.feng@asu.edu
URL: <http://www.public.asu.edu/~xfeng13>

Office Hour

Mon. Wed.: 2:00pm ~ 3:00pm (online through Zoom <https://asu.zoom.us/j/5299807411>)
Fri.: 11:00am ~ 12:00pm (at Coor 150 left most, Pod D or E)

I will be very glad to schedule another time with you if above time slots are not convenient for you, just talk with or email me to set up a time.

Textbook



Introduction to Algorithms. 3rd ed. by Cormen, Thomas, Charles Leiserson, Ronald Rivest, and Clifford Stein. MIT Press, 2009. ISBN: 978-026-203-3848.

- Extra lecture handouts, sample codes will also be provided through Canvas.
- A physical copy of the textbook is highly recommended! You will need this book for other courses or job interview in future. *A PDF copy of above e-book will be provided for CSE310 students through Canvas for education purpose only.*

Catalog Description

Advanced data structures and algorithms, including stacks, queues, trees, and graphs. Searching for graphs, hashing, sorting.

Prerequisites

For CS/CSE students, grades of at least C in CSE 220 or CSE 240 and at least D in MAT 243. For CMS students, grades of at least C in CSE 210 and at least D in MAT 243 or MAT 300. Programming experience in C++ or C is expected.

Major Topics Covered in this Course

- Asymptotic Notation
- Worst-case Analysis
- Sorting, Lower Bound for Sorting, Heaps, and Heap sort
- Median, Selection Problems: More on Divide-and-Conquer Algorithms
- Hashing
- Binary Search Trees, Red Black Trees
- Disjoint Sets (union-find): Introduction to Amortized Analysis
- Longest Common Subsequence: Introduction to Dynamic Programming
- Graph Algorithms (Depth-First Search, Breadth-First Search, Topological Sort, MST: Greedy Algorithms, Shortest Paths)

Academic Integrity

Students in this class must adhere to ASU's academic integrity policy, which can be found at <https://provost.asu.edu/academic-integrity/policy>. Students must review this policy and become familiar with each of the areas in which academic dishonesty can occur. All academic integrity violations will be reported to the Fulton Schools of Engineering Academic Integrity Office. The Academic Integrity Office (AIO) maintains record of all violations and has access to academic integrity violations committed in all other ASU college/schools. Course content, including lectures, are copyrighted materials. In addition to ASU's academic integrity policy, students may not share outside the class, upload, sell, or distribute course content or notes taken during the conduct of the course (see [ACD 304-06](#), "Commercial Note Taking Services" for more information).

Students must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the student first complies with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

Getting Help

You can get help from the following three sources:

Instructor: Visit me during my office hour or schedule another time with me if the office hour is not convenient for you.

TAs: You can get help from TAs during their office hours in each week, TA will be put in several labs and their schedule will be available later on the course web page.

Peer Students: Students are encouraged to help each other, feel free to discuss problem sets and exchange ideas on how to solve them. However, there is a thin line between collaboration and plagiarism. **All assignments in this course must be individual work**, i.e. you are required to compose your own unique solution to each problem and each project. You cannot use any code written by any of your classmates. The Student Academic Integrity Policy of Arizona State University requires each student to act with honesty and integrity and to respect the rights of others in carrying out all academic assignments. There are a number of actions that constitute a violation of the policy. These actions include, but are not limited to:

- practicing any form of academic deceit.
- referring to materials or sources or employing devices (e.g., audio recorders, crib sheets, calculators, solution, manuals, or commercial research services) not specifically authorized by the instructor for use during tests, quizzes,
- homework, and class activities.
- acting as a substitute for another person in any academic evaluation or using a substitute in any academic evaluation.
- possessing, buying, selling, or otherwise obtaining or using, without appropriate authorization, a copy of any materials intended to be used for academic evaluation in advance of its administration.
- depending on the aid of others to the extent that the work is not representative of the student's abilities, knowing or having good reason to believe that this aid is not authorized by the instructor.
- providing inappropriate aid to another person, knowing or having good reason to believe the aid is not authorized by the instructor.
- submitting the ideas or work of another person or persons without customary and proper acknowledgment of sources (i.e., engaging in plagiarism);
- turning in work/code done by someone else
- copying work/code done by someone else
- writing one code together with someone else (it should be individual work)

For each assignment, **we will use powerful plagiarism detection software to compare and check all student submission**, if we find any cheating, we have no problem failing you in this class for the semester and having the appropriate entries placed in your ASU student records. All instances of cheating will be handled by the Dean's office according to the *ASU Student Academic Integrity Policy* and the [USI 104-01: Student Code of Conduct and Student Disciplinary Procedures](#).

Miscellaneous

- **Withdraw:** if you wish to withdraw from the class, submitting a completed withdraw form to the registrar office is the only guaranteed way to officially withdrawing from the class. Logon to the following website to see detailed withdraw policies.

<http://www.asu.edu/aad/manuals/usi/usi201-08.html>

- **Incomplete grade:** I will NOT give “Incomplete” grade for this course. Please check the university policy on this at <http://www.asu.edu/aad/manuals/usi/usi203-09.html>. Please do not come to me during or at the end of the semester and ask for an "I" grade simply because you have fallen behind.
- **Classroom Behavior:** Cell phones and pagers (must be/or state alternative rule) turned off during class to avoid causing distractions. The use of recording devices is not permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students.
- **Sexual Discrimination:** Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>. As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish discuss any concerns confidentially and privately.
- **DRC Service:** Students requesting classroom accommodations or modifications because of a documented disability must contact the Disability Resource Center. The phone number is (480)965-4732. For additional information concerning the services provided by the center, please visit their web site at <http://www.asu.edu/studentaffairs/ed/drc/>

The instructor reserves the right to revise this syllabus as necessary.