CSCE 5150 Analysis of Computer Algorithms

Course Information & Syllabus

**Instructor:** Dr. Yuan Li

**In-person Lectures:** Friday 1:00 pm – 3:40 pm, NTDP B155

**Office Hours:** Monday 10:30 am– 12:00 pm and Tuesday 11:00 am – 12:30 pm or by appointment

**Office:** NTDP E250B

**E-mail:** yuan.li2@unt.edu

**TA:** Sirisha Madh Talapuru

**Email:** sirishamadhtalapuru@my.unt.edu

**Hours:** 11: 00am – 1:00 pm Wednesday, Thursday and Friday

**Class Web Page:** Canvas

**Recommended Textbooks:**


**Prerequisites:** CSCE 4110 or equivalent. Students who do not have the prerequisites are discouraged to take the course. Class attendance is mandatory, 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.

**Course Objective:** 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 include:

- 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)

You are expected to check https://canvas.unt.edu/ often for course material, homework assignments and grades.
**Tentative Grading:**

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<thead>
<tr>
<th>Category</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>In-class Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-term Exam</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td>Challenging Projects</td>
<td>15%</td>
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- There will be at least four homework assignments. Homework assignments may include both written and programming exercises.
- Students should expect at least three in-class quizzes.
- The mid-term exam will be during class on TBD. The final exam will be on TBD.
- The final letter grade will be determined based on the following criteria: (It may be adjusted at the discretion of the instructors) A 90 – 100; B 80 – 89; C 70 – 79; D 60 – 69; F 59 and below.
- All the grading related discussion need to be done in 5 calendar days after the grade are posted.

**Submission:** All assignments, shall be turned in electronically using the Canvas. A late penalty of 20% will be applied to all late assignments for up to 3 calendar days. Assignments that are not turned in 3 days after the due date will not be accepted. All holidays and weekends will be counted as calendar days.

**Communication Expectations:** This course will use the Canvas Learning Management system (LMS) to distribute course materials, post grades, and submit assignments. You are responsible for checking the Canvas course site regularly for class work and announcements. You may find the Online Communication Tips (https://clear.unt.edu/online-communication-tips) helpful. Should you have any questions about the course or material in general, you may attend your instructor’s office hours or use your UNT e-mail address to e-mail your instructor directly at the e-mail address listed above with CSCE 5150-001 (or your specific course section) in the subject line. Every attempt will be made to answer e-mails within 24-48 hours, but if no reply is received within this time frame, please follow up with your instructor again to ensure a response.

For assistance with assignments or questions about grading of a particular assignment, you may also contact the TAs or graders assigned to this directly via e-mail or their office hours. This information will be available on Canvas under modules Start Here.

Grades will be posted on Canvas throughout the semester to provide an ongoing assessment of student progress, but typically about 10-15 calendar days after the assignment was due. **Grading appeals should first go to the TA or grader graded your assignment in 5 calendar days after grades posted, but if a resolution cannot be reached between the student and the grader, then you should go to the instructor who will have the final say on the grade.**

**Attendance:** **Attendance is mandatory.** A student is responsible for requesting an excused absence in writing, providing satisfactory evidence to the faculty member to substantiate excused absence, and delivering the request personally to the faculty member assigned to the course for which the student will be absent. When an absence is excused, the faculty member will provide a reasonable time after the absence for the student to complete an assignment or examination missed. Any student who misses a class over two absences without informing the instructor of valid reasons, and obtaining approval, will lose one point (out of 5 possible points).

**Plagiarism:** Plagiarism of any kind will automatically result in a grade of F for the course. Academic Integrity Standards in this course are consistent with UNT policy: **STUDENT STANDARDS OF ACADEMIC INTEGRITY (18.1.16), or other related/existing polices.** 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.

**Acceptable Student Behavior:** Student behavior that interferes with an instructor’s 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.

**Americans with Disabilities Act:** We cooperate with the Office of Disability Accommodation to make reasonable accommodations for qualified students (cf. Americans with Disabilities Act and Section 504, Rehabilitation Act) with disabilities. If you have not registered with ODA, we encourage you to do so. If you have a disability for which you require accommodation, please discuss your needs with the instructor or submit a written Accommodation Request on or before the fourth-class day.

**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.