CSCE 2110.001/2/4/5 Foundations of Data Structures

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Office Hours: 3:00pm – 4:00pm Monday NTDP F203
               4:00pm – 5:00pm Wednesday NTDP F203
               11:00am – 12:00pm, Tuesday/Thursday, NTDP F203

Class Rooms: NTDP K150/B185

Meeting Time: 10:30am - 11:20am, Monday/Wednesday/Friday
               1:30pm - 2:20pm, Monday/Wednesday/Friday

Teaching Assistants: Surya Bheema Raju Pasumarthi
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Special information for COVID-19
Call COVID hotline (844-366-5892, COVID@unt.edu) if you meet any of the following:

- Have one or more new or worsening symptoms of possible COVID-19 but have not been tested yet.
- Have tested positive for COVID-19.
- Do not have any symptoms but someone you live with (roommate, parent, etc.) has tested positive for COVID-19.
- Do not have any symptoms but recently spent time with someone (at work, home, etc.) is now exhibiting symptoms of, or is being tested for, COVID-19.
- Resources for information: https://healthalerts.unt.edu/symptoms-monitoring

Student Health and Wellness Center (SHWC) (940)565-2333:
- Contact SHWC immediately if having symptoms and need to be seen
SHWC has capacity to conduct a rapid COVID-19 antigen test for UNT students
If you are positive, you will be interviewed to determine close contacts
The SHWC works with public health officials to inform UNT community
Do not share health information of others within class
https://studentaffairs.unt.edu/student-health-and-wellness-center

Course Description:
Introduces students to the basics of more organized software developments. This include the basics of using Integrated Development Environments (IDE), proper debugging and testing strategies, and the use of code repositories. Students will be expected to work in teams to develop programming solutions in C or C++.
Additionally, the effective use of regular expressions to parse text and the use of hash tables to store data will be covered. By the end of the foundation courses, each student will have a solid foundation in conceptual and formal models and levels of abstraction as used in the field of computer science, as well as greater proficiency in software development.

Required Textbook:
We are using an E-Book this semester as the required textbook. Instructions for purchasing and using the textbook will be posted on Canvas, or a code can be purchased at the University Bookstore

Reference:

Expected Student Outcomes:
Student Outcomes are measurable achievements to be accomplished by the completion of the degree. These outcomes are evaluated as part of our ABET accreditation process.

Computer Engineering Students:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Computer Science Students:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.
3. Apply computer science theory and software development fundamentals to produce computing-based solutions.
Information Technology Students:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.
3. Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing-based systems.

Expected Course Outcomes:
Course Outcomes are measurable achievements to be accomplished by the completion of the course. These outcomes are evaluated as part of our ABET accreditation process.

1. Demonstrate the ability to use Integrated Development Environments (IDE) and use formal debugging tools and techniques to develop C/C++ programs.
2. Demonstrate the ability to develop unit tests and testing strategies for C/C++ programs.
3. Demonstrate the ability to use code repositories for project development.
4. Use abstraction in the design and implementation of algorithms, such as sorting and searching algorithms.
5. Design and implement programming solutions to problems in C or C++.
6. Collaborate with other students in a team towards the design and development of programming solutions.
7. Use regular expressions in C/C++ programs to match patterns.
8. Use of hash tables in design of software.

Attendance Policy:
Students are encouraged to attend all lectures in order to gain the full benefit of the course. While I will be posting my slides before class, they may not contain all of the content discussed during class, nor the examples presented on the board. If you are not able to attend class or recitation, please email me as soon as possible.

COVID-19 impact on attendance:
1. While attendance is expected as outlined above, it is important for all of us to be mindful of the health and safety of everyone in our community, especially given concerns about COVID-19. Please contact me if you are unable to attend class because you are ill, or unable to attend class due to COVID-19 including symptoms, potential exposure, pending or positive test results, or if you have been given specific instructions to isolate or quarantine from a health care provider or a local authority. It is important that you communicate with me prior to being absent so I may make a decision about accommodating your request to be excused from class and recitation.

2. If you are experiencing any symptoms of COVID-19 please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to
take due to symptoms, pending or positive test results, or potential exposure. While attendance is an important part of succeeding in this class, your own health, and those of others in the community, is more important.

**Statement on Face Covering**
Face coverings are required in all UNT facilities. Students are expected to wear face coverings during this class. If you are unable to wear a face covering due to a disability, please contact the Office of Disability Access to request an accommodation. UNT face covering requirements are subject to change due to community health guidelines. Any changes will be communicated via the instructor.

**Class Recordings & Student Likenesses**
Synchronous (live) sessions in this course will be recorded for students enrolled in this class section to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

**Recitation Policy:**
Recitations will be used to facilitate development of the projects for this course. As such, they are mandatory and failure to attend recitations may result in overall poor project outcomes. Further, failure to attend recitation on time will result in a student not receiving credit for the recitation.

**Submission Policy:**
All projects are expected to be submitted on time with all of the correct parts through the Canvas system. The project documentation must be created as a wiki page in GitLab, and no photographed or scanned content will be scored. Further, any content that is deemed illegible will not be scored. The program must be coded in C or C++ and contain ample comments and descriptions. All programs will be compiled and executed on the department’s CSE servers, and any that fail to compile or execute on that system will lose points. Additionally, a README file, in .txt format, with clear instructions on how to compile and execute your program must be included.

**Content Responsibility Policy:**
Students are responsible for all content presented in class and during recitations. While attendance will not be taken in class, you will be expected to know and understand the requisite topics and concepts. If you are confused or unsure about anything, please ask the instructor or the TA’s.
**Make-up Work Policy:**

For most situations there will be no make-up work for any assessment in this course. However, in the event of an unavoidable absence for one of the reasons below, email the instructor as soon as possible so we can work out a solution. The following events are grounds for make-up work: being a participant in a conference in which you are presenting; being in an athletic or other UNT associated event in which you are an active participant; a family emergency; a severe illness; military duty; or in certain cases and with some restrictions a religious event. Additionally, in the case of a missed assignment due to illness, make-up work will only be allowed by providing the instructor with a physical copy of a signed doctor’s note. See the UNT Attendance Policy for more information.

**Late Work Submission Policy:**

All projects may be submitted up to one day late at a 50% penalty. Any projects submitted two or more days after the due date will receive a 0.

**Academic Integrity and Collaboration:**

UNT policy 06.003 defines the following breaches of academic integrity:

A. **Cheating.** The use of unauthorized assistance in an academic exercise, including but not limited to:
   a. use of any unauthorized assistance to take exams, tests, quizzes or other assessments;
   b. usage of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; usage without permission, of tests, notes, or other academic materials belonging to instructors, staff members, or other students of the university;
   c. dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor;
   d. any other act designed to give a student an unfair advantage on an academic assignment.

B. **Plagiarism.** Use of another’s thoughts or words without proper attribution in any academic exercise, regardless of the student’s intent, including but not limited to:
   a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation.
   b. the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.

C. ** Forgery.** Altering a score, grade or official academic university record; or forging the signature of an instructor or other student.

D. **Fabrication.** Falsifying or inventing any information, data or research as part of an academic exercise.

E. **Facilitating Academic Dishonesty.** Helping or assisting another in the commission of academic dishonesty.
F. **Sabotage.** Acting to prevent others from completing their work or willfully disrupting the academic work of others.

Cheating of any sort will not be tolerated in this course. All submissions must be your own original work. Taking information or code from the internet or other students is considered a breach of academic integrity. Failure to adhere to these strict standards will be cause for disciplinary action that could be as severe as expulsion from the university. If it is determined a student cheated on any assignment in this course, they will receive an F for their final course grade and an academic integrity report will be filed with the Office of Academic Integrity. Further, UNT is now maintaining a database recording any acts of academic dishonesty that is available to employers.

Additionally, because these are group projects, if one group member is caught cheating the consequences of their actions will extend to the group as a whole. It is the responsibility of all group members to ensure that when they put their names on their submission as a whole and submit it, the submission does not contain any instances of cheating. Failure to report known instances of cheating within a group will be deemed facilitation of academic dishonesty and reported as such.

For more information see the [UNT Student Academic Integrity Policy](http://www.unt.edu/oda).

**Collaboration Policy:**

For each project submission, all work is expected to be your own. While you should be working with your group members, you are not to collaborate with other groups for projects, provide solutions to other groups, search for solutions on the internet, or purchase solutions. Doing so will be deemed a breach of academic integrity. However, for any non-graded, practice assignments students are encouraged to work together to solve problems.

**ODA:**

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at [http://www.unt.edu/oda](http://www.unt.edu/oda). You may also contact them by phone at **940.565.4323**.
Syllabus Revisions:
This syllabus may be modified as the course progresses should the instructor deem it necessary. Notice of changes to the syllabus shall be made through Canvas and/or in-class announcements.

Grading Policy:
By the end of the course you must have earned at least a 60% average from the exams. Failure to do so will result in a final grade of an F, despite having a potentially passing course average. Additionally, if there are questions about posted grades, they must be discussed with the instructor within two weeks of the grades being posted. After two weeks, barring an exceptional circumstance, grades will not be altered.

Grading Breakdown:

<table>
<thead>
<tr>
<th>Assignments &amp; Examinations</th>
<th>Total Percentage</th>
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<tbody>
<tr>
<td>Reading</td>
<td>5%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>10%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>15%</td>
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<tr>
<td>Exam 3</td>
<td>20%</td>
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<tr>
<td>Project 1</td>
<td>20%</td>
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<tr>
<td>Project 2</td>
<td>20%</td>
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</tbody>
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Important Dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>August 24, 2020</td>
<td>First Class Day (Monday)</td>
</tr>
<tr>
<td>September 7, 2020</td>
<td>Labor Day (no classes; university closed)</td>
</tr>
<tr>
<td>November 26-27, 2020</td>
<td>Thanksgiving Break (no classes; university closed)</td>
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<tr>
<td>December 2-3, 2020</td>
<td>Pre-finals Days</td>
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<tr>
<td>December 3, 2020</td>
<td>Last Class Day</td>
</tr>
<tr>
<td>December 4, 2020</td>
<td>Reading Day (no classes)</td>
</tr>
<tr>
<td>December 5-11, 2020</td>
<td>Finals</td>
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Tentative Course Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug 24, 26, 28</td>
<td>Intro; Project Development</td>
</tr>
<tr>
<td>2</td>
<td>Aug 31, Sep 2, 4</td>
<td>Code Repositories</td>
</tr>
<tr>
<td>3</td>
<td>Sep 9, 11</td>
<td>Code Repositories</td>
</tr>
<tr>
<td>4</td>
<td>Sep 14, 16, 18</td>
<td>Debugging Tools</td>
</tr>
<tr>
<td>5</td>
<td>Sep 21, 23, 25</td>
<td>Debugging Tools</td>
</tr>
<tr>
<td>6</td>
<td>Sep 28, 30, Oct 2</td>
<td>Hash Tables</td>
</tr>
<tr>
<td>7</td>
<td>Oct 5, 7, 9</td>
<td>Hash Tables</td>
</tr>
<tr>
<td>8</td>
<td>Oct 12, 14, 16</td>
<td>IDE’s</td>
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<tr>
<td></td>
<td>Dates</td>
<td>Topic</td>
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<tr>
<td>9</td>
<td>Oct 19, 21, 23</td>
<td>Regular Expressions</td>
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<tr>
<td>10</td>
<td>Oct 26, 28, 30</td>
<td>Regular Expressions</td>
</tr>
<tr>
<td>11</td>
<td>Nov 2, 4, 6</td>
<td>Unit Testing &amp; Test Driven Development</td>
</tr>
<tr>
<td>12</td>
<td>Nov 9, 11, 13</td>
<td>Pseudocode</td>
</tr>
<tr>
<td>13</td>
<td>Nov 16, 18, 20</td>
<td>README’s and Documentation</td>
</tr>
<tr>
<td>14</td>
<td>Nov 23, 25</td>
<td>Additional Content</td>
</tr>
</tbody>
</table>