CSCE 2100 Computing Foundations I

Instructor:	Mr. Joseph Helsing, Joseph.Helsing@unt.edu
Office Hours:	2:30pm – 3:30pm, Monday, CSE Department Front Office
Instructional Assistant:	Matthew Davidson, MatthewDavidson@my.unt.edu
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Help Lab Hours:	12:00pm – 1:30pm, Tuesday/Thursday, CSE Help Lab
Class Room:	NTDP B-185
Meeting Time:	12:30pm - 2:20pm, Monday/Wednesday

Course Description:
Introduces students to both data structures and formalisms used in computer science, such as asymptotic behavior of algorithms. Data structures and the formalisms used to both describe and evaluate those data structures simultaneously. By the end of the two-semester sequence of which this course is the first part, each student will have a solid foundation in conceptual and formal models, efficiency, and levels of abstraction as used in the field of computer science.

Required Textbook:
Foundations of Computer Science: C Edition, by Alfred Aho and Jeffrey Ullman, W. H. Freeman
Web link: http://infolab.stanford.edu/~ullman/focs.html

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. A solid foundation in conceptual and formal models.
2. The ability to use abstraction in the design and description of algorithms.
3. Use of C++ classes to implement trees, and lists.
4. Application of big-Oh notation in evaluating and comparing algorithms.
5. Use of tree, and list data structures in design of software.
6. An ability to apply combinatorics in solving real-world problems.

Attendance Policy:
Students are encouraged to attend all lectures and recitations in order to gain the full benefit of the course. While I will be posting my slides after class, they will 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.

Submission Policy:
All non-programming assignments are expected to be:

- Submitted on time
- In Microsoft Word .doc or PDF format
  - If you do not own a copy of Word, both computer labs in Discovery Park and the UNT library offer free access on any of their computers.
- Free of spelling and major grammar errors
  - If English is not your first language or you want assistance with your work, the UNT Writing Lab: http://writinglab.unt.edu/ is available free of charge to assist you with your work.
- Contain no scanned images
- Submitted through Blackboard Learn's TurnItIn system
  - This system automatically checks for plagiarism

All programming assignments are expected to be:

- Submitted on time
- Programmed in C++
- Contain ample comments and descriptions
- Runnable on the CSE machines without needing additional libraries

Make-up Work Policy:

For most situations there will be no make-up work for any assessments in this course. However, in the event of an unavoidable absence for one of the reasons below, email me 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 school 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. See the UNT Attendance Policy for more information.

Late Work Submission Policy:

All homework and programming assignments will be accepted a maximum of three days late with a 25% of the total value of the assignment point deduction per day late. Recitations must be turned in by the end of your assigned recitation slot and will not be accepted late.

Academic Integrity and Collaboration:

UNT policy 18.1.16 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. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments;
   c. acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University;
   d. dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor;
   e. 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 is considered cheating, unless properly cited. Failure to adhere to these strict standards will be cause for disciplinary action that could be as severe as expulsion from the university.

If a student is caught cheating, the following, escalating series of actions will be taken:

- **First instance:** The student will receive a 0 for the assignment and an academic integrity report will be filed with the Office of Academic Integrity.

- **Second instance:** The student will receive a 0 for the assignment, lose a full letter grade from their final course grade, and an academic integrity report will be filed with the Office of Academic Integrity.

- **Third instance:** The student will receive an F for their final course grade and an academic integrity report will be filed with the Office of Academic Integrity.

Note: Each incident will be dealt with on an individual basis and a particularly egregious case of cheating will result in more severe penalties.

Further, the nature of this class requires collaboration and discussion among the students. This is permissible and encouraged; however, all work must be your own, original work unless specified otherwise. If you have any questions, discuss them with myself or refer to the UNT Student Rights and Responsibilities web page.

Student Evaluations:
Student course evaluations are a requirement for all organized classes at UNT. The Student Perception Of Teaching (SPOT) evaluation will be made available to you at the end of the semester, providing you an opportunity to comment on how this course is taught. I am very interested in the feedback I get from students, as I work continually to improve my teaching. I consider course evaluations to be an important part of your participation in this class, and would appreciate your constructive comments and suggestions.

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*. You may also contact them by phone at **940.565.4323**.

Grading:
Below is a list of the assignments and exams you will be expected to complete during the course. None of the graded assignments during the semester will receive curves. Additionally, 10 points of the 250 for homework submissions is based on the successful completion and submission of all of the assignments. This means, if you make a good faith effort for each homework problem you will receive 10 points at the end of the semester. Further, each assignment must be submitted no more than 3 days late, or it will count as a failure to submit.

Additionally, for the recitations, you will be working in small groups to solve more complicated problems. In order to insure that everyone is contributing somewhat equally, after each recitation there will be a peer evaluation. The results of this evaluation will affect the number of points you receive for that particular assignment. Also, failure to attend recitation and assist your group members will result in you receiving 0 points for that day's assignment.

Assignments & Examinations	Overall Grade Points
Homework	**250**
Recitations	**250**
Programs	**200**
Exam 1	**150**
Exam 2	**150**
Total	**1000**

Course Topic Schedule:

Week	Topics
1	Introduction / Iteration, Induction, & Recursion
2	Iteration, Induction, & Recursion
3	Iteration, Induction, & Recursion / Running Time of Programs
4	Running Time of Programs
5	July 4th (No Class) / Running Time of Programs
6	Lists
7	Lists
8	Trees
9	Trees / Combinatorics & Probability
10	Combinatorics & Probability

Programming Schedule:

Week	Assignment and Due Date
1	
2	Program 1 Due (6/15 by Midnight)
3	
4	
5	
6	
7	Program 2 Due (7/20 by Midnight)
8	
9	Program 3 Due (8/1 by Midnight)
10	Program 4 Due (8/10 by Midnight)

Exam Schedule:

Week	Exam and Proctoring Date
1	
2	
3	
4	
5	
6	Exam 1 (July 11th 12:30-2:20 PM)
7	
8	
9	
10	Exam 2 (August 12th 12:30-2:20 PM)