

# CSCE 1030.002: COMPUTER SCIENCE I

## Spring 2022

**Course Instructor:** Dr. Pradhumna Shrestha

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- Include CSCE 1030.002 in subject line
- Always use your official UNT email address

**Class Location/Time:** ESSC 255/MoWe 10:30 PM – 11:50 PM

**Office Hours (In-Person/Zoom):** MoWe 3:00 PM-4:00 PM

**Office Hours Zoom Link:** <https://unt.zoom.us/j/3251832551>

**Required Textbook:** We are using an e-book called zyBook this semester.

How to use zyBook for assignments?

1. Open the assignment on Canvas (NOT zyBook).
2. Click on the load assignment tab and it will take you to the Zybook page.
3. **For the first time only, subscribe.**
4. Complete your assignment.
5. Press Submit on Canvas. You will not get any points until you do this.
6. Verify your grade on Canvas for the assignment. It's auto-graded and hence should appear immediately. If the grade shows zero or empty, something went wrong.

**Optional Reference Textbook:** Problem Solving with C++, Tenth Edition, by Walter Savitch, Textbook: Addison-Wesley, 2018. ISBN 978-0-13-444828-2.

### Canvas

This course will use the Canvas learning management system (LMS) to distribute course materials, communicate and collaborate online, post grades, and submit assignments. You are responsible for checking the Canvas course site regularly for class work and announcements.

### COURSE DESCRIPTION

CSCE 1030 is the introductory course for the computer science, computer engineering and information technology degrees offered by the Department of Computer Science and Engineering. As such it introduces students to the broad discipline of computing while placing emphasis on developing students' programming skills. In addition to two 80-minute "lecture" classes per week, each student will participate in a 2-hour 50-minute lab session each week.

### TOPICS (subject to change)

1. Basic CPU Architecture
2. Basic Data Types
3. Program Structure and Design
4. Algorithms
5. Comments
6. Basic Compiler understanding and operation

7. Pre-processor instructions
8. Expressions, statements and operators
9. Arithmetic and logical expressions
10. Loops and conditionals and other flow control
11. Functions
12. Arrays
13. Console I/O both C style and C++ style
14. Pointers
15. File I/O both styles
16. Strings both CStrings and String class
17. Structures and unions
18. Command Line Arguments
19. Using libraries
20. Debugging

### **COURSE OUTCOMES**

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

1. Describe how a computer's CPU, Main Memory, Secondary Storage and I/O work together to execute a computer program.
2. Make use of a computer system's hardware, editor(s), operating system, system software and network to build computer software and submit that software for grading.
3. Describe algorithms to perform "simple" tasks such as numeric computation, searching and sorting, choosing among several options, string manipulation, and use of pseudo-random numbers in simulation of such tasks as rolling dice.
4. Write readable, efficient and correct C/C++ programs that include programming structures such as assignment statements, selection statements, loops, arrays, pointers, console and file I/O, structures, command line arguments, both standard library and user-defined functions, and multiple header (.h) and code (.c or .cpp) files.
5. Use commonly accepted practices and tools to find and fix runtime and logical errors in software.
6. Describe a software process model that can be used to develop significant applications composed of hundreds of functions.
7. Perform the steps necessary to edit, compile, link and execute C/C++ programs.

### **ABET PROGRAM OUTCOMES**

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.

### **ADA STATEMENT**

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.

### **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 Dean of Students 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 <http://deanofstudents.unt.edu>.

### **GRADING POLICY**

Your course grade will be a weighted average according to the following:

- Participation Activities 5.0%
- Challenge Activities 10.0%
- Lab Assignments 10.0%
- Projects 1 – 3 (2.5% each) 7.5%
- Lab Assessments 1 – 3 (20%+20%+20% each) 60.0%
- Comprehensive Final Exam 7.5%

Grades will be posted on Canvas throughout the semester to provide an ongoing assessment of student progress, though final assessment will be measured using the weighted average above.

**Once a grade is posted on Canvas, students have two (2) weeks to dispute the grade, unless otherwise instructed.**

The proper channel for grade disputes is to first go to the original grader (either the TA or IA) in an attempt to resolve the issue. If, however, a resolution cannot be reached between the student and the grader, the student shall then go to the instructor who will have the final say on the grade.

**Participation and Challenge Activities:** The participation and challenge activities grades will be based on the timely completion of assigned Participation Activities and Challenge Activities, respectively, in the required zyBook e-book. **Pay special attention to see that your Zybook scores match your Canvas scores for these activities. Your assignments are autograded, so your Canvas score must populate immediately after you submit on Zybooks. If they don't start the activity on Canvas and submit again. You have two (2) weeks after the grade is available to dispute the grade if they do not match.**

**Lab Assignments:** Each lab assignment will be graded using the average of all lab components based on a 0/50/75/100 scale for each component. A missed lab due to tardiness or absence may result in a grade of 0 for the missed lab. The lowest lab assignment grade will be dropped.

**Projects:** There will be three programming projects assigned during the semester. These programming assignments will be accepted up to 24 hours late and be assessed a 50% grade reduction penalty. Programming assignments submitted more than 24 hours late will not be accepted and receive a grade of 0.

These programming assignments are designed to help you practice your coding on a larger project with various pieces of functionality. While the coding should be primarily your sole work, students, however, are allowed to get assistance from their classmates when working on these assignments. If you are having trouble with an assignment, please consult with your instructor, TAs, IAs, or Peer Mentors associated with the class.

**Assessment Exams:** There will be three assessment examinations given in this course. These exams will be given during the assigned lab section to assess the student's programming ability. The dates of these exams will be posted on Canvas and/or announced in class at least one week prior to the date of the exams. A make-up exam will be given at the discretion of the instructor when a student misses an exam with an excused absence. Unexcused absences on the date of an exam may result in a grade of 0 for the missed exam, so every effort should be made to attend class on the day of a scheduled exam.

**Final Exam:** There will be a final exam during the scheduled exam time on **Saturday May 07, 2022, from 8:00 AM to 10:00 AM**. All students are expected to take the final exam during the scheduled time period.

## **ATTENDANCE POLICY**

**Lecture Section:** Class attendance is regarded as an obligation as well as a privilege. All students are therefore expected to attend each class meeting. A student who misses class is still responsible to find out what was discussed and to learn the material that was covered and obtain the homework that was assigned on the missed day. The instructor is not responsible for re-teaching material missed by a student who did not attend class. Therefore, each student is accountable for and will be evaluated on all material covered in this course, regardless of attendance. If there are extenuating circumstances preventing you from attending the class, please notify your instructor so that you can work together to ensure your success in learning the material.

If you are experiencing any symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or [askSHWC@unt.edu](mailto:askSHWC@unt.edu)) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at [COVID@unt.edu](mailto:COVID@unt.edu) for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

**Face Coverings:** UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

**Lab Section: Students are required to attend their assigned weekly lab section.** If you anticipate being unable to attend your regular lab section with a valid excuse, you must contact your instructor in advance of your lab section and before the lab is closed so that an alternate lab section may be scheduled. Failure to do so may result in a zero for the lab, but please keep in mind that the lowest lab grade will be dropped. The instructor has the final say as to whether or not an absence is excused.

**Make-up Labs:** You are not permitted to go to a different lab section than the one you are registered for. However, if you have to miss your lab section due to unavoidable circumstances such as health or other university engagements, you may be granted permission to complete your lab in a different lab section with instructor permission. To request permission, you need to email the instructor with the following information:

- **Which lab are you missing? Provide date, time and lab section number.**
- **Why are you missing the lab? Attach documentation such as receipts, doctor's note, etc. for proof.**
- **When do you want to make up the lab? Provide date, time and lab section number. A list of available labs to choose from is available in the Lab Schedule spreadsheet on Canvas. Make sure you choose a lab with small enrollment so that you can be accommodated in the lab.**

**Requests for make-up labs without this information will not be considered.**

## **Course Materials for Remote Instruction**

Remote instruction may be necessary if community health conditions change, or you need to self-isolate or quarantine due to COVID-19. Students will need access to a working webcam, speaker, and microphone to participate in fully remote portions of the class. Information on how to be successful in a remote learning environment can be found at <https://online.unt.edu/learn>

## **CLASS NOTES AND PROGRAMMING EXAMPLES**

The lecture slides will be available on Canvas.

The programming examples provided in the class will be on the CSE servers inside my public folder. You will need an SSH client to access the server and an SFTP client to download my examples to your personal computer. I will show in the second or third week of the class on how to do these. An announcement will be posted on Canvas for future reference.

There is also a document named **Accessing CSE Servers** on Canvas that shows you how to access these programming examples.

You can also bring your own computer in the class and type along with me during the programming demonstrations.

## **ACADEMIC INTEGRITY**

This course follows UNT's policy for Student Academic Integrity that can be found at <https://policy.unt.edu/policy/06-003> as well as the Cheating Policy for the Department of Computer Science and Engineering (posted on Canvas). Specifically, the first instance of a student found to have violated the academic integrity (i.e., cheating) policy will result in a grade of "F" for the course and have a report filed into the Academic Integrity Database, which may include additional sanctions. Collaboration with other students is only acceptable for lab assignments that are not given as part of an exam. And although you may seek assistance from your TA/IA, Peer Mentors, and other students during the lab session for non-exam lab assignments, you are still required to work on your own lab assignment and turn in your individual work to Canvas before the lab session is complete, unless directed otherwise. Individual programming assignments (i.e., projects) given outside of the lab in this course are meant to be problem-solving exercises and must be the sole work of the individual student. You should not work with other students on shared program solutions or use program solutions found on the Internet. Specifically, you should never copy someone else's solution or code, and never let a classmate examine your code. A sophisticated program will be used to compare your work to the work of all other students (including students in past classes). If you are having trouble with an assignment, please consult with your instructor, TAs, IAs, or Peer Mentors associated with the class. You must do your own work on participation and challenge assignments as well as exams. There should be no ambiguity here. In case the above description and in-class discussion of appropriate and inappropriate collaboration do not answer all of your questions, please meet with your instructor and look at the university Student Rights and Responsibilities web page.

## STUDENT RESPONSIBILITY

Students are responsible for submitting the correct assignments (i.e., uploading the proper files) for each applicable assignment submission on Canvas. In certain cases, when an assignment is submitted on time, but to an incorrect assignment location (e.g., submitting Lab 04 to Lab 05 location on Canvas), the assignment may be assessed a 30% reduction penalty if the due date has passed. If you have any questions or concerns about your submission, please work with your instructor, TA, IA, or Peer Mentor to ensure the correct file(s) is/are submitted.

## 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 class announcement.

## TENTATIVE SCHEDULE

| Week          | Lecture                | Lab                   |
|---------------|------------------------|-----------------------|
| 01/17-01/21*  | Syllabus, Chapter 1    | -                     |
| 01/24-01/28   | Chapter 2              | Lab 1                 |
| 01/31-02/04   | Chapter 2, Chapter 3   | Lab 2                 |
| 02/07-02/11   | Chapter 3, Chapter 4   | Lab 3                 |
| 02/14-02/18   | Chapter 4              | Lab 4                 |
| 02/21-02/25   | Chapter 5, Review      | Lab 5                 |
| 02/28-03/04   | Chapter 5              | Lab Assessment 1      |
| 03/07-03/11   | Chapter 5              | Lab 6                 |
| 03/14-03/18** | --                     | --                    |
| 03/21-03/25   | Chapter 6              | Lab 7                 |
| 03/28-04/01   | Chapter 6, Review      | Lab 8                 |
| 04/04-04/08   | Chapter 7, Chapter 8   | Lab Assessment 2      |
| 04/11-04/15   | Chapter 9              | Lab 9                 |
| 04/18-04/22   | Chapter 9, Review      | Lab 10                |
| 04/25-04/29   | Chapter 10, Chapter 11 | Lab Assessment 3      |
| 05/02-05/06   | Final Review           | Lab 11 (Extra Credit) |
| 05/07         | Final Exam             |                       |

\*01/17: MLK Day

\*\*03/14-03/18: Spring Break