

CS 1521—Computer Science II
Section 1
Spring Semester 2021

Course Information

Instructor	Steve Holtz
Email	sholtz@d.umn.edu (Email Policy)
Phone	(218)726-7664
Office	Heller Hall 319
Office Hours	Via email communication
Course Web Resources	<ul style="list-style-type: none">• https://www.d.umn.edu/~sholtz/cs1521-1• Canvas
Teaching Assistants	See the course home page.
Text(s)	Caranno, Frank M. & Timothy M. Henry <i>Data Abstraction and Problem Solving with C++: Walls and Mirrors</i> 7 th Ed. Pearson, 2017. (Errata).
Software	This course provides access to UMD's Full Access Student Computer Labs . <ul style="list-style-type: none">• Windows: <code>putty</code> (installed on all UMD Full Access Student Lab computers)• Mac OS and Linux: <code>ssh</code> <p><code>putty</code> or <code>ssh</code> is required for remote access to the <code>janus.d.umn.edu</code> server.</p> <p>Note that all required software below is already installed and configured for course work on the <code>janus.d.umn.edu</code> server:</p> <ul style="list-style-type: none">• <code>cmake</code>—For generation of build systems• <code>emacs</code>—For editing C++ source code• <code>g++</code> (version 4.9.x or greater)—For compiling C++ code• <code>git</code>—For C++ source code version control• <code>make</code>—For building C++ executables
Lecture	Section 1— 2:00 to 2:50 PM on Monday, Wednesday and Friday in Online/Remote
Discussion	Section 2—1:00 to 1:50 PM on Thursday in Online/Remote Section 4—2:00 to 2:50 PM on Thursday in Online/Remote Section 6—3:00 to 3:50 PM on Thursday in Online/Remote Section 8—4:00 to 4:50 PM on Thursday in Online/Remote
Lab	Section 3—1:00 to 1:50 PM on Tuesday in Online/Remote Section 5—2:00 to 2:50 PM on Tuesday in Online/Remote Section 7—3:00 to 3:50 PM on Tuesday in Online/Remote Section 9—4:00 to 4:50 PM on Tuesday in Online/Remote

Course Prerequisite(s)

CS 1511—Computer Science I OR
CS 1581—Honors Computer Science I

A grade of C– or better is required in prerequisite course.

Course Description

Continuation of introduction to computer science. Methods for procedural and data abstraction. Focus on abstract data types. Algorithm analysis, software design and issues in ethical use of computers. Requires implementation of significant programming projects.

Course Objectives

Computer Science II continues student's introduction to the C++ language and the concepts of abstraction, encapsulation, polymorphism and inheritance. The basic design principles of object-oriented design are discussed and the concept of an ADT (Abstract Data Type) is introduced. The ADT concept is then elaborated on in a series of assignments and lectures covering the basic ADTs: lists, stacks, queues, tables, trees, priority queues, and graphs. By the end of the course, the student should have mastered the main concepts of object-oriented programming (OOP) and have successfully completed programming assignments in C++ on each of the basic ADTs.

UMD's Student Learning Outcomes

This course supports UMD's Student Learning Outcome 1: Demonstration of competence in a major field.

Policies

Exams	<ul style="list-style-type: none">• Your valid U Card (UMD ID card) may be required at the start of every exam. If your ID is required you will not be allowed to take (or makeup) the exam without presenting it first.• Exams are closed book, closed calculator, and closed notes.• No makeup examination will be given without written confirmation of a University-sanctioned excused absence and prior consent of the instructor. See the course excused absence policy below.• Computer Science department policy requires at least 70% of the points in this course to come from examinations (including quizzes).
Final Exam	<ul style="list-style-type: none">• The two hour final exam is cumulative.• It is departmental policy not to return final exams.• Under no circumstances will a final exam be given early.• The final exam will be administered at the time and place according to the final exam schedule and not at any earlier time. This course will adhere to UMD's Final Exam Policy.

Quizzes

Written quizzes will be given during some discussion sessions (see [Course Schedule](#) for dates). Two lowest quiz scores will be dropped. Quizzes cannot be made up without an [excused absence](#).

Lectures

Broadly disseminating class notes, video lectures, and/or any other course materials beyond the classroom community or accepting compensation for taking and distributing classroom notes and/or any course materials is plagiarism. You cannot use the lecture notes or other material from this course in any way you choose. See UMD's [Appropriate Use of Class Notes and Course Materials Policy](#).

Grading

What	Weight	Date
Midterm 1	19	Wednesday 17 February 2:00 to 2:50 PM
Midterm 2	19	Friday 26 March 2:00 to 2:50 PM
Final Exam	19	Wednesday 5 May 2:00 to 3:50 PM
Quizzes (8)	8	See Course Schedule
Labs (7)	15	See Course Schedule
Projects (7)	20	See Course Schedule
Total Weight	100	

To calculate your current Total Weight, use the following worksheet:

	Actual Scores (AS)	Running Total of Actual Scores (RAS)	Maximum Points per Assignment (MP)	Running Total of Maximum Points (RMP)	Section Percentage
Lab 1 Lab 2 Lab 3 Lab 4 Lab 5 Lab 6 Lab 7					L = RAS/RMP
Project 1 Project 2 Project 3 Project 4 Project 5 Project 6 Project 7					P = RAS/RMP
Quiz 1 Quiz 2 Quiz 3 Quiz 4 Quiz 5 Quiz 6 Quiz 7 Quiz 8 Quiz 9 Quiz 10					Q = RAS/RMP
Midterm 1					M1 = AS/MP
Midterm 2					M2 = AS/MP
Final					F = AS/MP

Scratch your two lowest quiz scores (only eight of them count toward your grade) from the AS column of the quiz row. If you remove these lowest scores, then remove their corresponding total points from the RAS column.

Calculate the Section Percentage for each row by dividing the appropriate column totals indicated by the equation in this column. For example, assuming that in the labs row we have the RAS column showing a total sum of 78 and the RMP column showing a total sum of 90, then to calculate the L Section Percentage, we have $L = RAS/RMP = 78/90 = 0.867$.

Plug the results in the last column into the expression below and solve for TotalWeight.

$$TotalWeight = L * 15 + P * 20 + Q * 8 + M1 * 19 + M2 * 19 + F * 19$$

You can also use the [Grade Estimator](#). This tool is available from the course Web site.

Final grades are based on your TotalWeight with:

- A- cutoff at 90
- B- cutoff at 80
- C- cutoff at 70
- D cutoff at 60
- F is below 60

These cutoffs may be lowered, but they will not be raised.

Course scores will be posted on [Canvas](#).

Syllabus or Schedule Revision

The instructor reserves the right to make changes to the course syllabus or schedule at any time. Revisions will be posted on the course Web site and announced during lecture.

Course Material

You are responsible for reading assigned textbook material and for obtaining any material covered in lecture, discussion, and lab, including:

- lecture notes.
- assignments and handouts.
- turning in projects and labs.

Attendance	<p>If you are unable to attend a class meeting (lecture, lab, or discussion), it is your responsibility to obtain any notes, assignments, and extra copies of handouts from a fellow student.</p> <p>If you must miss a class meeting where an assignment must be turned in, you should either:</p> <ul style="list-style-type: none"> • Turn in the assignment early • Obtain and submit written confirmation of a University-sactioned excused absence and prearrange a due date extension with the instructor (see the course excused absence policy below).
Excused Absence	<p>Students are expected to attend all scheduled class meetings. It is the responsibility of students to plan their schedules to avoid excessive conflict with course requirements. However, there are legitimate and verifiable circumstances that lead to excused student absence from the classroom. University-sactioned reasons for excusing an absence include: subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For complete information, please see UMD's Excused Absence Policy.</p> <p>Due date extensions for course assignments and make-up examinations will only be granted for a University-sactioned excused absence and with proof supplied in writing from a proper authority. The written proof can be supplied via email.</p>
Student Conduct Code	<p>Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. Students are expected to adhere to Board of Regents policy: Student Conduct Code.</p>
Teaching & Learning	<p>UMD is committed to providing a positive, safe, and inclusive place for all who study and work here. Instructors and students have a mutual responsibility to insure that the environment in all of these settings supports teaching and learning, is respectful of the rights and freedoms of all members, and promotes a civil and open exchange of ideas. This course will adhere to UMD's Teaching & Learning Policy.</p>
Course Submissions	<p>Responses to all course inquiries must be provided and submitted in the English language. "Course inquiries" include: Answers submitted on examinations or quizzes; Solutions submitted for course assignments (for example, labs and projects); And, course communications (email, for example).</p> <p>If English is not your native language there are resources on campus that can provide assistance for you. It is your responsibility to request accommodations that might be available for you. I will support reasonable accommodations that are recommended through an advisor from International Student Services. I recommend that you pursue getting any available accommodations (for example, extra time to take examinations) as soon as possible.</p>
Academic Integrity	<p>All assignments in this course will involve individual work. Submissions that are overly similar could result in the involved individuals to called into the instructor's office and possible plagiarism charges imposed. The repercussions resulting from these charges will vary on a per-case basis and may be turned over to the University as a charge of academic dishonesty.</p> <p>Academic dishonesty tarnishes UMD's reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. This course will adhere to UMD's Student Academic integrity Policy.</p>
Sexual Misconduct	<p>As a University employee, I am required to report issues regarding sexual misconduct to the Title IX office.</p> <p>For confidential support: UMD Health Services umdhs@d.umn.edu (218)726-8155</p> <p>Direct sexual misconduct reports to the University Title IX office: UMD Title IX office contacts (218)726-8501</p>

Assignments

Expectations

- Attend all lecture and lab sessions.
- Do your own work on all assignments.
- Do not ask or answer code related questions of your fellow students. When you and a fellow student work in this way it is likely that you'll produce overly similar code and you increase the likelihood that you'll get called in on a possible plagiarism violation.
- Start all programming-related assignments early so you have ample time to resolve any difficulties.
- NEVER place any of your work on a Web server. Even in a "secret" directory.
- You should expect to put 15 hours per week (on average) into this course [3 hours of your time for each credit hour]. This includes attending three hours of lecture and two hours of lab/discussion each week. So, you should expect to spend 10 hours per week working on course-related material outside of the formally scheduled course time.

Help

If you need help with a project, start with:

1. course materials, such as text, notes, and previous assignments.
2. the TA on duty in HH 314 or MWAH 177.
3. your own TA during their office hours.
4. a tutor at the [UMD Tutoring Center](#) Library 2nd floor.
5. the instructor during office hours.

When emailing for assistance with a problem, you must follow [the course email policy](#). Be sure to include **ALL** of your source code in your email (attachments work well), if you have a programming related question.

Submissions

Hard copy (paper) source code files and output of projects and some labs are required to be turned in.

- Hard copy submission can be made (in order of preference):
 1. to your teaching assistant at the beginning of your discussion or lab session on the due date.
 2. in your lab section's drop box in MWAH 177 before due date.
 3. to your instructor before or after lecture before due date.

Late Work

Late work will be handled in the following manner: Assignments

- turned in at beginning of class session on the due date—full credit.
- turned in any later time on the due date or the next day—25% deduction.
- after one day late—zero points.

Word of wisdom: Start programming your solution to an assignment **early**.

The instructor's consent is mandatory for extensions to assignment due dates. Do **NOT** approach your teaching assistant to obtain a due date extension.

Assignment Points

In order to earn points, each assignment must exceed a threshold of 40% of available points.

Course Extra Credit

At the time of the final exam, if you have earned points for all lab and project assignments (i.e. you have no zero scores in the grade book), then you will earn a bonus 10% of the available points for the final exam (i.e. one full letter grade) with the sole condition that the total points for your final exam cannot go above 100% of the points available on the final exam.

Note that this is an all-or-nothing policy: You cannot earn a portion of these points. Do your own work on and turn in your work for all assignments in time to earn points (see [Late Work](#) policy above) to earn maximum benefit.

Students with Disabilities

It is the [policy](#) and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements—such as time limited exams, inaccessible Web content, or the use of non-captioned videos—please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources (DR) to discuss and arrange reasonable accommodations. Please call (218)726-6130, access@d.umn.edu, or visit the DR Website at <https://www.d.umn.edu/disability-resources> for more information.

Mental Health and Stress Management

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the [Student Mental Health Website](#) (<https://www.mentalhealth.umn.edu>).

COVID-19 ONLINE CLASS

Going online is a huge effort, for instructors and students. It is imperative that you put forth the effort required to be successful: Claim your education.

Please take the free online course “[Learning Online 101](#)” to learn strategies for success in an online learning environment. This Canvas hosted, Web-based course is free and will take 2–3 hours to complete.

With online learning, there are several policies related to this course that you must follow:

1. **Do NOT use the “email” messaging system in Canvas**

Messages sent there will not be answered. All class communications will occur via email, outside of Canvas, unless your instructor directs otherwise.

2. **Check your email daily**

Save updates and communications for future reference.

3. **TA office hours and lab assistance**

Your TA may be holding lab sessions and their office hours via Zoom at regularly scheduled times. Be sure to attend these sessions to ask questions and get assistance.

Email will be the primary means of communication. Generally, you should **email your TA for assistance first**.

Email your instructor directly with course-related issues: broken Web links, missing content, request for assignment due date extension, etc. Your instructor will communicate with the entire class with assistance for common issues that arise. If you email your instructor, he/she may not repeat previously communicated assistance or updates.

4. **All assignment solutions must be submitted for grading in Canvas**

Details for submitting each assignment will be found in the “Turn In” section of each assignment’s write-up.

For CS 1521 only, assignment solutions will also be submitted on janus using a `turnin-dir` program. Details are outlined in each assignment’s “Turn In” section.

5. **Exams/Quizzes (for courses with quizzes) will be taken online in Canvas**

Exams/quizzes will be given at the time specified in the course schedule.

Exams/quizzes cannot be made-up (taken late) without a University-sanctioned, documented, excused absence (see the excused absence policy). If you miss an exam/quiz, communicate with your instructor (via email) ASAP to see what options are available.

6. **Instructor office hours will be held via email**

Please attach code (or for CS 1121, use a Zip archive uploaded to Google Drive) as specified for your course.

7. **Lectures will be delivered via videos posted in Canvas**

Lecture videos will be posted on Canvas as soon as possible before the start of lecture time (or as soon as possible when they are ready). Occasionally, posting could get delayed.

8. **You must be proactive in getting your work done**

There are no differences in the “Attendance”, “Excused Absence”, or “Late Work” policies in an “in-person” and a “remote learning” style course:

- a. **Assignments must be turned in on-time for full credit** and up to 24 hours late for late credit (25% point deduction).
- b. **Exams/quizzes will be held at specific dates/times**. Making up a missed exam will require a University-sanctioned, documented, excused absence.

Please refer to the online syllabus and email policy for details.