CS 173: Intermediate Computer Science

Course Syllabus

General Info:

Instructor	Dr. Flannery Currin, Olin 210, currinf@denison.edu
Office Hours	Wednesdays, 9:00-10:00 a.m.; Thursdays, 1:30-4:30 p.m.; Fridays, 10:00-11:00 a.m. Drop-in or book through Calendly: https://calendly.com/currinf-denison/10min
Class TA	Jenny Nguyen, nguyen_j6@denison.edu
Class Time	MWF, 11:30 a.m. - 12:20 p.m.
Class Location	Talbot 222 or Fellows 100 (when specified)
Textbook	*Programming and Problem Solving with C++, 7ed* by Dale, Weems and Richards (ISBN: 978 1284 157 321) Paper and/or e-book are ok

Course Description:

The primary goal of this course is to move from an introductory programming experience into a more professional one. We will increase our sophistication of programming tools, learn a new language, develop comfort with different programming environments, and change our perspective of who we are writing software for.

Students who complete this course will

- Learn a new computing environment, the linux platform.
- Develop software engineering practices, tools, and techniques.
- Learn a new programming language, the C/C++ language.
- Become very comfortable with the Abstract Data Type (ADT) model.
- Design and build ADTs in a variety of C++ data structures.
- Continue to hone problem solving skills.

Department Values and Expectations:
The Denison University Computer Science Department shares a set of values and expectations for all computer science students.

1. **Embrace intellectual independence**: Embrace the departmental mission and the core learning goals of each course as primary objectives. Focus actions and intentions to learn the material and cultivate a problem-solving mindset, not just to get assignments completed.

2. **Be respectful**: Strive for respectful, meaningful, and productive relationships between and across roles, genders, nationalities, backgrounds, and identities. Proactively contribute towards a learning environment that nurtures and respects all people.

3. **Act with integrity**: Act with integrity and honesty when representing one's self and one's capabilities. Take pride in discovering the best version of one's self.

4. **Practice responsible workplace behaviors**: Adopt and practice professional behavior (e.g., arriving on time for class). Strive to develop productive work habits.

5. **Grow through failure**: Be courageous with experimentation and seek out opportunities outside one's comfort zone. Recognize that failure is an important part of the learning process. We grow as we encounter and strive to overcome obstacles.

Grades:
Grading will be weighted and translated into letter grades following the scheme outlined in the tables below.

Item	**Number**	**Percentage**
Projects	8	20%
Quizzes	5	50%
Final Exam	1	25%
Readings	$\approx$24	5%
Total		100%

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
93.33+	90+	86.67+	83.33+	80+	76.67+	73.33+	70+	66.67+	63.33+	60+	< 60

Projects:
There will be 10 projects over the course of the semester. 8 will be graded and factored into the final grade as typical. 2 (the stop-gap projects) will not be factored into the grade average directly, but they are used to practice skills critical for doing well on the final exam. A certain correctness level must be met on these stop-gap projects to pass the course after a round of feedback and a period for resubmissions.

Programming projects will generally be due Fridays at 8pm. View the schedule at the end of this document to see exact due dates. Each project will indicate whether it should be completed individually or in a group. The projects are bigger and more complex than CS1 projects, so you will need to allocate several days of work for them.

Quizzes:
There will be 6 quizzes over the course of the semester. Quizzes will be given approximately every other Wednesday for 25 minutes in class. View the schedule at the end of this document to see exact due dates. They will all be paper and pencil (no computers). The lowest quiz grade will be dropped. There will be no makeup quizzes since the lowest-socring (possibly missed) quiz for the course is dropped. To receive up to half credit back on missed quiz questions, you may submit a corrected version of your quiz **within a week of receiving the graded quiz on Canvas**. Corrected quizzes can be turned in during office hours, in class, or in the slot outside my office door.

Final Exam:
Our final exam is on **Saturday, May 10, 9:00-11:00 a.m.**. I am not permitted to change this date, so please be sure you do not have a conflict. The final exam will be

cumulative.

Readings:
Reading assignments will be available through Canvas and cover the assigned reading for each class. They will be due by the start of the class in which we will cover the material. These will be graded mostly for completion (and some accuracy). Answer keys will be posted two days after the reading assignment is due, and late submissions will not be accepted after the keys have been posted. Toward the end of the semester, some assignments in this category will require you to think about a previous reading and the first day of lecture on a topic and submit a question or two you still have about the topic.

Tips For Success:

- The single biggest thing you can do to improve your learning (and your grade) is to manage your projects well. Start them early. Complete them early. Leave extra time to go back and improve them. You will learn significantly more than waiting until a day or two before the deadline and then trying to cram in time for a solution.
- Do the reading regularly, and take good notes. We will not have time in class to learn/cover all the material. You will need to learn a good bit on your own through the reading. This is an important part of the course learning. If you skip the reading, you will start to fall behind on projects and quizzes.
- It can be easy to get distracted in a computer lab. Taking good notes (especially hand-written notes) during lecture can help you stay engaged. Make good use of class time – we will often have coding exercises in class that are meant to help you practice skills you will need for upcoming projects and quizzes.
- Seek help early if you feel you are starting to fall behind. Come see me. I am here to help you learn.

Where to Get Help:
Our course has a Teaching Assistant. Jenny Nguyen is CS major who is a dedicated assistant/tutor for the course. She will host open lab hours for assisting with projects a couple of days per week. I would highly recommend looking to me or Jenny for help during our respective office hours rather than the departmental general tutors or a tutor through academic support and enrichment. Please remember TAs are students taking their own classes so cannot devote time to helping outside their regularly scheduled hours. Help with anything other than coursework for CS173 is outside the scope of a TA's job. **Please do not email me or Jenny code – bring it to an office hours visit instead**.

Please use the Announcements section of the course canvas page. I will post announcements and other things of note here.

Policies:

Late Projects receive a 10% deduction per 24 hour period. Projects that are more than 3 days late will not be accepted. Students must be present on the day of quizzes, or approach a professor in advance to make other arrangements if they have a university-excused absence. Readings submitted after two days late receive a 0.

Attendance is not formally recorded. This class covers a lot of material at a quick pace. To succeed in the class, students will need to attend regularly and participate in class discussions. Students will get more out of this class if they attend class, come well prepared, participate in discussions and engage their fellow students. If a student misses class, they should please ask fellow classmates about the missed material and consult the Canvas page. Excessive absences may lower a student's course grade; I will generally approach the student first if absenteeism is a problem.

Academic Integrity is of the utmost importance. In this course, some of the project work will be individual while other assignments may be based on group work. Students should assume that work is to be done individually unless group work is explicitly mentioned. A good rule to follow is to make sure the work you submit reflects your own intellectual achievements and not those of someone else. While you may discuss project questions with other students, you must type your own code and you should never look at anything written or produced by someone else. If you are stuck, seek help from the course professor, the course assistant, or post a question on canvas. Good time management strategies are helpful for avoiding academic integrity violations. Most violations occur out of desperation when a student faces a pending deadline and does not have the time to overcome an obstacle. Cases of academic fraud are reported to the institution (where they may affect a student's permanent record) and will incur a course grade penalty such as failure for the assignment or failure for the whole course. If you have any doubts or gray areas, please first ask the professor.

Proposed and developed by Denison students, passed unanimously by DCGA and Denison's faculty, the Code of Academic Integrity requires that instructors notify the Associate Provost of cases of academic dishonesty. Cases are typically heard by the Academic Integrity Board which determines whether a violation has occurred, and, if so, its severity and the sanctions. In some circumstances the case may be handled through an Administrative Resolution Procedure. Further, the code makes students responsible for promoting a culture of integrity on campus and acting in instances in which integrity is violated. Academic honesty, the cornerstone of teaching and learning, lays the foundation for lifelong integrity.

For further information about the Code of Academic Integrity, see `http://denison.edu/academics/curriculum/integrity`.

Using Online Resources can be valuable, but students should exercise care. There is prolific help for C++ available online. Students may use online resources such as `https://www.learncpp.com/` or `https://en.cppreference.com/w/` for REFERENCE help such as looking for a specific C/C++ language item, or for how to solve a specific compile error. Do not use online resources to help you decide how to solve projects, design classes, or implement any sizable portion of your code. **Generative AI tools such as ChatGPT, Google Gemini, or Microsoft Copilot are unlikely to be useful tools in this course.** At this stage, we are focused on building foundational conceptual understanding, and Generative AI tools are likely to produce problematic code and test cases. Projects in this course are primarily intended to be practice for the in-class quizzes and final exam, so the most important outcome of them is your understanding of the concepts used in your solutions. Using generative AI tools or solutions found online for projects reduces your opportunities to practice skills that will serve you on quizzes and the final exam and could be considered an academic integrity violation.

Academic Accommodations are available. Students with a documented disability should complete a Semester Request for Accommodations through their My Accommodations app on MyDenison. It is the student's responsibility to contact me privately as soon as possible to discuss specific needs related to your learning in the classroom and studying. I rely on the Academic Resource Center (ARC) located in 020 Higley Hall, to verify the need for reasonable accommodation based on the documentation on file in that office. Reasonable accommodation cannot be applied retroactively and therefore ideally should be enacted early in the semester as they are not automatically carried forward from a previous term and must be requested every semester.

Logistic arrangements for testing-related accommodations should be made at least a week in advance of an evaluation and follow the Exam Accommodation Policy.

Multilingual Support is available on campus. Students who use English in addition to other languages are welcome to use the resources available at the Multilingual Learning Office (MLO). The MLO includes Morayo Akinkugbe, PhD, the Assistant Director of Multilingual Programming and Support; Anna Adams, the English Language Support Specialist; and the student consultants who work with them. They are all trained and experienced in helping students address the different

issues that arise when working in more than one language. If English is not your first or only language, please consider utilizing this resource, which is available to **ALL** Denison students. Dr. Akinkugbe, Ms. Adams, and the student consultants offer a variety of support for L2 students, including consulting with you about your written language (grammar, syntax, word-choices), developing strategies to manage your reading assignments, assisting with class conversation and presentations, and helping to devise ways to develop and effectively use all your skills in English. You can set up an appointment via https://denisonuappointments.as.me/mlo, or by emailing the Multilingual Learning Office directly at englishhelp@denison.edu.

Title IX protects students from gender-based discrimination. Coursework submitted for this class is generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees are required by University policy to report allegations of discrimination based on sex, gender, gender identity, gender expression, sexual orientation, or pregnancy to the Title IX Coordinator. This includes reporting all incidents of sexual misconduct, sexual assault, and suspected abuse/neglect of a minor. Further, employees are to report these incidents that occur on campus and/or that involve students at Denison University whenever the employee becomes aware of a possible incident in the course of their employment, including via coursework or advising conversations. There are others on campus to whom you may speak in confidence, including clergy and medical staff and counselors at the Wellness Center. More information on Title IX and the University's Policy prohibiting sex discrimination, including sexual harassment, sexual misconduct, stalking and retaliation, including support resources, how to report, and prevention and education efforts, can be found at: https://denison.edu/campus/title-ix.

This course adheres to **Denison's Academic Credit Policy**. This is a 4 credit hour course. You are expected to put in two hours of work outside of class per credit hour each week (8 hours per week). This course involves substantial work on programming assignments that the instructor will provide detailed feedback on through Canvas and office hours. Be sure to allocate time to read the feedback provided.

Copyright law applies. As an institution which strives to inspire and educate our students to become discerning moral agents and active citizens of a democratic society, we are committed to complying with all laws regarding copyright throughout the University. This syllabus and all course materials used in this course may be copyrighted and accordingly will be governed by the provisions of the U.S. copyright law (for an overview see https://copyright.gov/circs/circ01.pdf and for fair use guidelines see https://copyright.gov/fair-use/). In particular, posting any course materials on commercial sites or creating a bank of materials for distribution to other students may be considered a violation of the University's Code of Academic Integrity as well as a breach of copyright law. If you have any questions about these guidelines, please speak with your instructor.

Schedule of Important Due Dates

JANUARY
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
19	*20* MLK Day – no class	*21*	*22*	*23*	*24* Project 1 released	*25*
26	*27*	*28*	*29*	*30*	*31* Project 1 due Project 2 released	*1*

FEBRUARY
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2	*3*	*4*	*5* Quiz 1	*6*	*7* Project 2 due Project 3 released	*8*
9	*10*	*11*	*12*	*13*	*14* Project 3 due Projects 4 & 5 released	*15*
16	*17*	*18*	*19* Quiz 2	*20*	*21* Project 4/5 test cases due	*22*
23	*24*	*25*	*26*	*27*	*28* Project 4/5 programs due Project 6 released	*1*

MARCH
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2	*3*	*4*	*5* Quiz 3	*6*	*7* Project 6 due Project 7 released	*8*
9	*10*	*11*	*12*	*13*	*14* Project 7 due Project 8 released	*15*
16	*17* Spring break – no class	*18* Spring break – no class	*19* Spring break – no class	*20* Spring break – no class	*21* Spring break – no class	*22*
23	*24*	*25*	*26* Quiz 4	*27*	*28*	*29*
30	*31*	*1*	*2*	*3*	*4* Project 8 due Project 9 released (stop-gap 1)	*5*

APRIL
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
6	*7*	*8*	*9* Quiz 5	*10*	*11*	*12*
13	*14*	*15*	*16* Project 9 due (stop-gap 1) Project 10 released (stop-gap 2)	*17*	*18*	*19*
20	*21*	*22*	*23*	*24*	*25* Project 10 due (stop-gap 2) Project 9 revisions due	*26*
27	*28*	*29*	*30* Quiz 6	*1*	*2*	*3*

MAY
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
4	*5* Project 10 revisions due	*6*	*7* Exam week – no class	*8* Exam week – no class	*9* Exam week – no class	*10* Final Exam 9-11 AM