

**CS2100**  
**Discrete Structures**

**Prof. Shireen Elhabian**

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General Course Information

Course Number	CS 2100
Course Name	Discrete Structures
Credit Hours	3
Component	Lecture
Designation	Core course for computer science and data science programs
Contact Hours	15 weeks (not including Fall Break): two 80-minute lecture per week (not including Labor Day and Thanksgiving)
Semester	Fall 2023
Pre-requisites	'C-' or better in (CS 1410 OR CS 1420 OR AP CS-A score of 5) AND (MATH 1210 OR MATH 1220 OR MATH 1250 OR MATH 1310 OR MATH 1311 OR AP Calc AB score of 4+ OR AP Calc BC score of 3+ OR Higher Math)

*Students not meeting these prerequisites will be removed from CS 2100 in the first week of class.*

**Class Meeting Time** MoWe / 1:25PM - 02:45PM (MDT) led by Prof. Elhabian

Students should come to class prepared and expect to practice solving problems individually and in small groups.

- Meeting Place** In-person – [GC 1900](#)
- Discussion Sections** Fridays at various times and locations (students should check their class schedule), led by Teaching Assistants (TAs).  
*Students should come to discussions prepared with questions about the recently-covered material and expect more problem-solving practice.*
- Course Website** Canvas
- Textbook** *Discrete Mathematics* by Ensley and Crawley (2006, ISBN: 0471476021) **(optional)**
- Final Exam** Wednesday, December 13, 2023 1:00PM – 3:00PM MDT

#### Instructor

- Name** Prof. Shireen Elhabian ([WEB 3608](#))
- Email** [u0877336@gcloud.utah.edu](mailto:u0877336@gcloud.utah.edu)
- Home Page** <http://www.sci.utah.edu/~shireen>
- Office Hours** Tuesdays 08:00AM – 10:00AM (MDT) @ Zoom  
Check [How to get help in CS 2100](#) for the Zoom link

#### Teaching Assistants

- Office Hours** Check [How to get help in CS 2100](#) for details

TA Name	Email
Milena Belianovich	<a href="mailto:u1419504@utah.edu">u1419504@utah.edu</a>
Kevin Cuellar	<a href="mailto:u1387855@utah.edu">u1387855@utah.edu</a>
Gunnar Hovik	<a href="mailto:u1357887@utah.edu">u1357887@utah.edu</a>
Palguni Pendurthi	<a href="mailto:u1413533@utah.edu">u1413533@utah.edu</a>
Austin Li	<a href="mailto:u1364758@utah.edu">u1364758@utah.edu</a>
Jack Severson	<a href="mailto:u1351322@utah.edu">u1351322@utah.edu</a>
Jonah Thomas	<a href="mailto:u1366629@utah.edu">u1366629@utah.edu</a>
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- University Calendar** <https://registrar.utah.edu/academic-calendars/fall2023.php>

**IMPORTANT NOTE:** All dates and policies in the CS 2100 syllabus and Canvas course are subject to change. Any changes will be announced within a reasonable timeframe during lectures and/or posted on Canvas under the Announcements page.

## Course Description

CS 2100 introduces discrete mathematics and structures at the foundation of computer science and teaches logical thinking about discrete objects and abstract things. It covers logic, set theory, functions, relations, graph theory, combinatorics, probability, and proofs.

*This class is fast-paced and relies on students spending considerable time watching videos, studying, and solving problems outside class.*

## Learning Objectives

This course aims to give the students a fundamental understanding of propositional logic, predicate logic, formal logical arguments, finite sets, functions, relations, graphs, counting problems, probability, mathematical proofs, and their applications to Computer Science.

Upon completion of CS 2100, students are able to:

1. use symbolic logic to model real-world situations by converting informal language statements to propositional and predicate logic expressions, as well as apply formal methods to propositions and predicates (such as computing normal forms and calculating validity)
2. assign practical examples to the appropriate set, function, or relation model, while employing the associated terminology and operations
3. illustrate by example the basic terminology of graph theory, as well as properties and special cases (such as Eulerian graphs, spanning trees, isomorphism, and planarity)
4. map real-world applications to appropriate counting formalisms, including permutations and combinations of sets, as well as exercise the rules of combinatorics (such as sums, products, and inclusion-exclusion)
5. calculate probabilities of independent and dependent events, in addition to expectations of random variables
6. analyze problems to determine underlying recurrence relations, as well as solve such relations by rephrasing as closed formulas
7. employ formal proof techniques (such as direct proof, proof by contradiction, induction, and the pigeonhole principle) to construct sound arguments about properties of numbers, sets, functions, relations, and graphs

Students can expect to achieve these outcomes only if they:

- watch the designated videos before class;
- attend and actively participate in class meetings and discussion sections;
- come to class and discussion sections prepared to practice solving problems individually and in small groups;
- and complete pre-class Canvas quizzes, homeworks, and tests/exams in good faith and on time.

**Note:** students may vary in their competency level on these outcomes.

## Learning Environment

**Safe and respectful learning environment:** In this class, any derogatory comments based on race, ethnicity, class, gender identity, sexual orientation, religion, (dis)ability status, age, citizenship, or nationality will not be

tolerated. Additionally, expressing opinions in a manner that silences the voices of others is not permissible. We are committed to maintaining a respectful and inclusive learning environment, and therefore, egregious disrespect, such as racism, sexism, ageism, homophobia, transphobia, classism, and similar behaviors, will not be tolerated. As teaching staff, we take incidents of discrimination, bias, and harassment seriously. If any such incidents occur, we will promptly file reports with the [Office of Equal Opportunity, Affirmative Action, and Title IX \(OEO\)](#). It is essential that every student feels safe and respected in our classroom. We understand that distinguishing between free speech and professional behavior and discrimination, bias, and harassment can sometimes be unclear. Therefore, we encourage students to approach us for open, judgment-free, and confidential conversations if they have any questions or concerns. Alternatively, we can refer them to the OEO for further clarification. Together, we can maintain a positive and inclusive learning environment that fosters mutual respect and support for all students.

**Equitable, diverse, and inclusive environment:** Our goal is to ensure that students from diverse backgrounds and perspectives are well-served by this course. We are committed to addressing students' learning needs both inside and outside of class and viewing the diversity present in the class as a valuable resource, strength, and benefit. In our approach, we will present materials and activities that respect and acknowledge diversity, encompassing aspects such as gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture. Moreover, we expect all students to treat each other, including the teaching staff, with the same level of respect and inclusivity. Creating a welcoming and inclusive environment is a shared responsibility, and we encourage students to communicate with us if they identify ways in which the classroom environment or teaching materials can be improved to foster a more equitable, diverse, and inclusive learning atmosphere. Your feedback is vital in helping us continually refine our practices and ensure that every student feels valued, supported, and empowered to thrive in this course.

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## Course Materials

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**Website:** The CS 2100 Canvas course is always under development, with updates to the class schedule, course notes, homework instructions, and more, occurring regularly. It is critical that students become familiar with the Canvas course right away and plan to visit it several times a week, at a minimum.

**Teaching materials:** The instructor employs a variety of teaching materials, including recorded videos, slides, written notes, and sample problems, both for pre-class preparation and during class instruction. These materials are made available to students on Canvas before each lecture, ensuring they have ample time to review and familiarize themselves with the upcoming topics. Additionally, after each lecture, the in-class slides and notes, complete with solutions and any annotations made during the lecture, are posted on Canvas. This allows students to review the content covered in class and refer back to the solutions presented. Furthermore, discussion slides are also provided on Canvas, which serve as a guide for individual or group activities during discussion sections. However, the solutions and any scribbles made during these discussions are not posted, to encourage active participation and critical thinking among the students during these discussions.

**Answer keys:** The release schedule for answer keys in the class is as follows:

- **Written homeworks:** Answer keys for written homeworks will be made available to students on the Monday after the homework due date, with the exception of the last homework, for which the answer key will be released on the last day of classes.
- **Practice tests:** Answer keys for practice tests will be released on the Friday following the respective review session.
- **Midterm tests:** Answer keys for midterm tests will be provided to students on the Friday after the test has been conducted.

Following this schedule ensures that students have access to the correct answers and explanations in a timely manner, allowing them to review their work, learn from their mistakes, and prepare effectively for future assessments.

**Personal computers:** Students can use their personal computers to complete homework assignments, which involve typing problem solutions and taking Canvas quizzes. However, it's essential to note that encountering technical issues such as broken tools, computer malfunctions, or network connectivity problems will not be considered valid reasons for deadline extensions. To avoid any last-minute challenges, students are encouraged to plan ahead and have a contingency plan in place. If their computer is not functioning correctly, they should be prepared to use a lab computer as an alternative. This proactive approach ensures that technical difficulties do not hinder their ability to meet homework deadlines and maintain their progress in the course.

**Recordings:** Due to the interactive nature of class meetings and discussion sections, they are not recorded. Students who miss class are encouraged to thoroughly study the materials provided for pre-class prep by watching videos and taking the pre-class quiz, solve the practice problems posted on Canvas before lecture time on their own or with classmates and ask questions during instructor office hours or TA help hours.

**Textbook (optional):** The [class schedule](#) includes suggested reading materials for each lecture from the book "Discrete Mathematics: Mathematical Reasoning and Proof with Puzzles, Patterns, and Games" by Ensley and Crawley (2006, ISBN: 0471476021). It's important to note that purchasing or renting the textbook is not mandatory for students. The optional readings are provided for those who wish to delve deeper into the subjects covered in each lecture. Rest assured, the pre-class and in-class teaching materials are self-contained, ensuring that all necessary information is covered during the lessons.

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## Communication

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**Class website:** The class website is on [Canvas](#) at <https://utah.instructure.com>. A key responsibility for a student in this course is to use the online Canvas class website. Students must check their email and Canvas regularly for the updated syllabus, course materials, announcements, corrections, and grades until course grades are posted on Dec 26<sup>th</sup> 2023.

**Email linked to Canvas:** The teaching staff will use the email addresses connected to the Canvas site to reach out to students when necessary. Students are expected to check their email and the class website regularly.

**Which email to use:** Students are required to use their University Umail for all communications with the teaching staff (instructor and TAs).

**Piazza:** We will use [Piazza](#) for class discussion, including technical questions, clarifications, and announcements. The system is highly catered to getting the students help fast and efficiently from classmates, TAs, and the instructor. Rather than emailing questions to the teaching staff, students are expected to post their questions on Piazza. Students should [sign up](#) right away and set notifications appropriately. I have received several questions about the access code for Piazza. Students can find the access code for Piazza on [How to get help in CS 2100](#) under "Get help online".

**Timeframe for response:** Students should allow two business days for the teaching staff to reply to their questions. The teaching staff will aim to address questions posted on Piazza promptly during regular weekday work hours (roughly 9 am to 5 pm, Monday-Friday). Questions posted in the evenings or during weekends will usually be addressed during regular work hours on the following business day or week, respectively. Although there might be occasional responses in the evenings or on weekends, we advise students not to solely rely on this and to plan their inquiries accordingly. Our priority is to provide timely and efficient support during our regular work hours to ensure a smooth learning experience for all students.

**Online etiquette:** Students and the teaching staff (the instructor and TAs) are expected to create a respectful online learning environment. All online interactions (including but not limited to emails, Piazza, Canvas, and Zoom) are expected to follow common rules for good online etiquette:

- Be respectful and professional.
- Be aware of strong language, all caps, and exclamation points.
- Be careful with humor and sarcasm.
- Do not post or share (even privately) inappropriate material.

Disrespectful or inappropriate online communications will be deleted from online platforms (e.g., Piazza and Canvas). Severe cases may be referred to the appropriate committee or office within the University for possible disciplinary actions.

**Announcements:** Important announcements to the class will be made through the "Announcements" tab on the class canvas and Piazza; there is otherwise no class mailing list. Students are responsible for monitoring announcements sent via Umail or Canvas.

**Check Canvas and Piazza regularly:** Communication between the instructor, teaching assistants (TAs), and students will primarily take place through the Canvas platform and Piazza. It is the student's responsibility to regularly check these communication channels to stay informed about course updates, announcements, and any important information. If a student fails to receive emails sent to them through Canvas or overlooks an announcement due to not checking these platforms regularly, it will be considered the student's own responsibility. In such cases, students cannot claim grounds for a deadline extension or request a regrade if they miss an important deadline or instruction. To ensure that students stay up-to-date with course-related communication, it is strongly advised for them to regularly check their Canvas messages and Piazza posts, and also consider enabling email notifications to receive timely updates. Proactively monitoring these platforms will help students stay on track and avoid any misunderstandings or missed deadlines.

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## Class Format

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**Classroom structure:** This course follows a teaching style referred to as a "blended classroom," also known as a "hybrid classroom." Essentially, it merges both live and online learning components, offering students a balanced learning experience. The approach combines traditional in-class, instructor-led teaching with online resources, fostering a more adaptable and convenient learning journey for students. Through this blend, students can enjoy the advantages of face-to-face interaction and guidance during in-class sessions while simultaneously accessing dynamic and flexible learning opportunities outside the physical classroom. The course includes a combination of in-person class sessions complemented by various online educational materials and activities. The primary at-home pre-class activity for students will involve preparing for the class by watching video lectures and completing pre-class quizzes. During class time, the focus will be on practicing problems individually and in small groups. This format differs from a traditional class where lectures occur in the classroom and practice takes place at home. The advantage of this approach is that students get more exposure to practice problems and receive faster feedback on their solutions. In particular, students access foundational content before attending the actual lecture. This allows class time to be used more effectively for discussions, activities, and addressing specific questions, rather than merely delivering basic information. However, it places a greater responsibility on students to study the materials independently by watching specific videos. In essence, students who come prepared to class are likely to learn more effectively, whereas those who don't prepare may struggle and experience difficulty in passing the course. For useful tips on succeeding in CS 2100, students can refer to the guide "[How to succeed in CS 2100](#)".

**Learning model:** This course adopts the "spiral learning" model, which combines the introduction of material to students at progressively challenging levels with the concept of "spaced learning." Spiral learning is a

teaching approach recognizing the value of repeated encounters with a subject. Each time students revisit a topic, they deepen their understanding and enhance their skills, improving long-term retention. The curriculum is thoughtfully structured to "spiral" back to previously covered concepts, enabling students to build upon their existing knowledge and abilities in a gradual and systematic manner. The methodology aligns harmoniously with the principles of spaced learning, incorporating regular intervals of review and reinforcement at varying levels of complexity, instead of cramming information into one single learning session. The underlying idea stems from the spacing effect, a well-documented cognitive phenomenon highlighting how information is better retained when reviewed multiple times with increasing time intervals between each review. Essentially, the human brain benefits from encountering the same information multiple times, strengthening the neural connections associated with that information and facilitating easier recall in the future.

**Learning components:** In this course, each topic is revisited eight times throughout the learning process, with each encounter increasing in complexity and depth.

1. Instructor's pre-lecture videos, warmup problems, and quizzes cover the basic knowledge of the topic, and students can learn at their own pace and convenience. Students have the autonomy to control the pace of their learning. They can pause, rewind, or fast-forward through the video content based on their individual learning needs. Warm-up problems are introductory problems designed to help students ease into the topic. These problems serve as a gentle start to the learning process, allowing students to refresh their knowledge of foundational concepts covered in the videos, build confidence, and prepare their minds for more complex material ahead. Online pre-class quizzes (via Canvas) help students recall the material and give them early feedback if they need more preparation for class. When students come to the class already familiar with the basics, they can better engage with more advanced concepts, ask informed questions, and participate actively in discussions. Pre-lecture videos also serve as a valuable review resource for students. They can revisit the videos later in the course or during exam preparation to refresh their memory on fundamental concepts.
2. Instructor-led lectures enable face-to-face interactions with the teaching staff where students can advance their basic knowledge acquired through pre-class preparation, put their knowledge into practice, expand their understanding by practicing problems solo and in small groups, and receive in-class help and faster feedback on their solutions. With basic knowledge already covered in pre-lectures, the instructor delves deeper into the subject matter during the class. This allows for more interactive and intellectually stimulating discussions. Lectures also provide an opportunity for students to seek personalized guidance and support by having direct in-class help from TAs as students solve practice problems. TAs can address individual questions and offer targeted assistance to enhance in-class learning. Students are encouraged to bring a notebook and a pencil to class. These will be useful as scrap paper for working on in-class problems, plus students can use them to take notes. In class, students will be asked to solve problems and then discuss their solutions with neighboring students and/or a TA. The point of the discussion aspect is to make the student's reasoning explicit and reinforce not only getting the right answer but also using the right solution.
3. TAs-led discussion sections cover more advanced practice problems in a relatively smaller-scale classroom. Discussion sections challenge students to think critically within a collaborative learning environment, apply their knowledge in complex scenarios, and enable students to bring their own questions to the discussion. Students can thus benefit from diverse perspectives, share approaches, and learn from each other's strengths. This deeper level of engagement fosters a deeper understanding of the material. Successfully solving more advanced problems can boost students' confidence in their abilities, and students become more self-assured in approaching difficult tasks.

4. Homeworks include a set of problems per module, enabling students to reinforce the concepts and knowledge covered in class by practicing problem-solving, critical thinking, and analytical skills on their own and receiving written feedback on their solutions. Regular practice through homework helps build competence and confidence in learning the material.
5. X-in-Practice homeworks involving programming enrich the learning experience by providing practical, hands-on opportunities for students to explore and reinforce the concepts they are studying. They offer a deeper appreciation for the importance of discrete structures in computer science and beyond. These homeworks allow students to apply the theoretical concepts of discrete structures to practical, real-world scenarios. Students get to see how these concepts are used to solve computational problems, enhancing their understanding of the subject. Students also learn to break down problems into smaller, manageable steps, apply algorithms, and develop efficient solutions, fostering critical thinking, analytical skills, and algorithmic thinking.
6. Supplemental homeworks are provided to students as additional practice opportunities, allowing them to further reinforce their understanding of the material covered in class. While supplemental homeworks are not required to be submitted, students can choose to attempt these problems to challenge themselves and deepen their knowledge of the subject.
7. Practice tests contain various questions at a similar difficulty level and time constraints as the actual exam. When students review their performance on practice tests, they can pinpoint topics or concepts where they need further improvement and can modify their study strategies to focus on areas that need more attention. Taking practice tests under timed conditions helps students practice time management during exams and teaches them how to allocate time wisely among different sections or questions. This experience is invaluable in preparing students for the pressure and expectations of the real exam. This can reduce test anxiety and help students feel more comfortable when they encounter the actual test.
8. Online review sessions provide a platform for students to ask questions and seek clarification on topics they find challenging or unclear before tests. These sessions reinforce the material covered in class by revisiting important concepts, formulas, and theories in the context of solving practice problems. This repetition enhances long-term retention and memory recall during the actual test. A test review session acts as a final revision opportunity before the test. Students can refresh their memory and consolidate their knowledge in preparation for the exam.

**In-class Q&A:** At the start of each lecture, a discussion forum will be made available on Canvas, where students can post their questions during the class. TAs will actively monitor this forum and respond to queries during the lecture. If multiple students have the same question, it will be addressed collectively at the class level. This approach strikes a balance between efficiently utilizing class time and ensuring that students' individual questions are addressed during the lecture. Additionally, common misconceptions will be tackled at the class level, fostering a supportive and interactive learning environment.

**In-class polls:** During lectures, the instructor may conduct class polls to gauge students' understanding. To participate, students must sign up for [Poll Everywhere](#) using their [Umail](#) account, which is free of charge. They can respond to the polls using their phone, computer, or tablet/iPad. Engaging in these polls will enhance students' active learning experience in the classroom. It is essential to clarify that these polls do not count toward students' grades.

Here are the instructions to set up your Poll Everywhere account.

1. Go to [pollev.com/shireenelhabian560](http://pollev.com/shireenelhabian560)
2. On the left, click Registration



3. Click "Create one now" on the bottom right (do not sign in with google, apple, or facebook)
4. [Use your umail address \(uid@utah.edu\)](mailto:uid@utah.edu)
5. After logging in, click Register
6. Register with shireenelhabian560
7. Click Settings on the left -> Edit Phone
8. Enter your phone number

The last two steps allow you to text your answers in as a backup option in case you cannot connect to the classroom Wi-Fi.

To text your answers, send SHIREENELHABIAN560 to 22333 to join the session.

Another option, if you're on your phone, is to turn off wifi and use cellular data to enter your responses (it's a small amount of data).

**Getting help:** If you need additional help, please use Piazza to ask additional questions. The teaching staff or other students can help answer questions. Use of the Canvas Inbox or email is discouraged for CS 2100 questions. The teaching staff will also hold regular office hours, including remote office hours if the student is isolated or unable to attend in person. The teaching staff will be doing their very best to help students with learning and practicing the course material, but they are human too and probably won't be very available during nights or on weekends.

For this reason, we **strongly recommend that students start their homework early** (as soon as it is released) so that students can seek help at a time when help is available. See [How to get help in CS 2100](#) for more details. See also the resources provided by the [University Student Success Advocates](#).

If you encounter uncertainty or confusion regarding homework/quiz questions, it is your responsibility to take proactive action and contact the instructor or teaching assistant (TA) for clarification. Seeking clarification in a timely manner is crucial to ensure that you understand the assigned work properly and can complete them accurately. Misinterpretation of assignments will not be accepted as a valid excuse for incomplete or incorrect submissions. It is essential to clarify any doubts early on, as it demonstrates a proactive approach to your learning and responsibilities as a student in the course.

The instructor and TAs are there to support you and provide assistance throughout the learning process. Don't hesitate to reach out to them for help to ensure that you can effectively complete your homework assignments and stay on track with your studies. Taking this step will help you stay informed and confident in your coursework, leading to a more successful and rewarding learning experience.

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## Attendance

**Lectures and discussions attendance:** Attending lectures and discussions is strongly recommended for students to develop problem-solving skills through individual and small group practice. While attendance is not part of the grade, these sessions play a crucial role in helping students understand the course material, develop critical thinking skills, and foster a deeper comprehension of the subject matter. Moreover, engaging in lectures and discussions allows students to actively participate in the learning process, ask questions, and gain valuable insights from their peers and the teaching staff. In these sessions, students have the opportunity to engage actively with the course material, work through problems, and hone their critical thinking abilities. Lectures provide essential guidance and instruction to put basic knowledge into practice, while discussions offer a collaborative environment for students to solve problems together, exchange ideas, and learn from each other's perspectives. By participating in these interactive sessions, students can enhance their problem-solving capabilities, which are invaluable for their academic and professional growth.

**On remote attendance:** Remote attendance is not allowed in this class. While technology has facilitated remote learning, it may not be the optimal approach for this interactive class that thrives on active engagement, hands-on experiences, and real-time interactions. In-person learning offers the advantages of a dynamic and immersive experience that allows students to fully immerse themselves in the subject matter, collaborate effectively, and build a deeper understanding of mathematical concepts. Remote attendance, on the other hand, may hinder student participation and lead to disparities in learning outcomes due to technical challenges and a lack of collaborative opportunities. In-person classes enable effective demonstrations and immediate feedback and foster a sense of community among students, which enhances problem-solving skills and promotes a supportive learning environment.

**Policy on the use of technology in class and discussions:** Class and discussion times are used for problem-solving and practice. Students are expected to engage with the instructor, TAs and classmates during lectures and discussions. Laptops, iPads, Tablets, and mobile devices are only permitted for note-taking; however, research has shown that handwritten notetaking is more beneficial to students than typed note-taking [\*]. Similarly, all CS 2100 tests and the final exam require students to handwrite solutions on paper, making handwritten note-taking a good practice. See [How to take good notes](#) for tips. Furthermore, technology tempts students to multitask during class meetings, the success of which is wishful thinking for students who must focus on learning new and complex material. For these reasons, students are discouraged from using laptops, iPads, Tablets, and mobile devices during class. Laptops and mobile devices should be used during class only when instructed, and the use is limited strictly to in-class activities.

[\*] Mueller, P. A. & Oppenheimer, D. M. (2014). The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological Science*, 25(6), 1159-1168. doi:10.1177/0956797614524581.

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## Student Course Feedback

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The student course feedback survey holds significant importance for the school and the instructor for several reasons. Firstly, it serves as a valuable tool to measure the program's success and assess the quality of teaching provided to students. The school places great importance on these evaluations and considers students' opinions seriously. Through the survey, students have a direct impact on the feedback provided, allowing their voices to be heard. It is worth noting that all responses are kept confidential and anonymous, ensuring students' privacy and the results are made available to the instructor after the final grades are posted.

Secondly, the survey is equally important to the instructor. The instructor is committed to delivering the best possible learning experience and continually seeks opportunities for improvement in her teaching approach. Honest and constructive feedback from students is crucial in helping the instructor identify areas for growth and enhancement. By understanding students' perceptions and experiences, the instructor can make informed adjustments to her teaching strategy, ensuring it better aligns with the needs and preferences of the students. Student feedback thus creates a feedback loop that fosters continuous improvement and enhances the overall learning experience for students.

The instructor will implement the strategy below to encourage students to provide feedback.

- The instructor will give students in-class time during the last lecture to complete the course evaluation. The instructor will leave the classroom to make students more comfortable, and the TAs will stay to answer questions.
- If the response rate exceeds 80% of the class, everyone in the class gets 0.5 points of the total of 100 points as extra credit.
- The instructor will also administer anonymous surveys throughout the semester to understand better students' learning experiences, where students are encouraged to mention what they like about the course and what they would like to see improved. Constructive comments and suggestions are very

welcomed. If the response rate for each survey exceeds 60% of the class, everyone in the class gets 0.5 points of the total of 100 points as extra credit.

## Evaluation

Students are expected to exert a strong effort on all homework assignments, tests, in-class discussions, and quizzes. This effort should be based on a thorough and attentive examination of the assigned material, including videos and practice problems. The evaluation of student performance in this course will be based on the following criteria:

**Midterm tests and final exam:** All tests and exams are paper-based and administered in person. Three midterm tests are to be given during the class meetings on the following dates:

- Test #1: Logic on **Wed Sep 6, 2023**
- Test #2: Sets, functions, relations, and graphs on **Wed Oct 18, 2023**
- Test #3: Combinatorics and probability on **Wed Nov 15, 2023**

As an accommodation for potential travel, illness, or quarantine situations, the final course grade will be computed using the two highest test scores for each student. This means that if a student is unable to attend one of the test dates, they can use their "drop" score for that particular test. However, students who are unable to be present for more than one of the test dates should consider taking CS 2100 in a future semester. It is important to note that no make-up exams will be available for missed tests. Students are encouraged to plan accordingly and prioritize attendance on the designated test dates to ensure their best performance in the course.

The final exam is cumulative and scheduled for **Wed, Dec 13, 2023, 1:00 – 3:00 pm MDT**. This date and time are set by the University and are not negotiable.

Each student must bring their UCard to every test and final exam, and they may be asked to show their UCard when turning in the test/exam. No other type of identification may be used for this purpose.

General rules for midterm tests and the final exam:

- During the exam, no other materials/devices are permitted except for an 8.5x11" letter-sized cheatsheet (double-sided, handwritten, type-set, or print, with any texts not smaller than 8 points font size). The cheatsheet is not mandatory. If a student uses one, it must be submitted together with their test/exam.
- The exam is to be done independently. Submitting as one's own, work that is copied from another student or an outside source is considered academic misconduct. *The sanction for academic misconduct in CS 2100 is to fail the course.*
- Students will be divided into two groups: [GC 1900](#) for those with odd UIDs and [S BEH AUD](#) (for midterm tests, extra room for the final is TBD) for those with even UIDs. Test papers will be distributed precisely 5 minutes before the scheduled test time to allow students to start the exam promptly at the designated starting time. To ensure a smooth process, please arrive at the classroom at least 5 minutes before the test time, ready to begin. Please take your seat in the classroom according to your UID-based group assignment. It is essential for students to plan their commute time appropriately to arrive on time for the test. Punctuality is the responsibility of each student to ensure an organized and efficient testing environment.
- To ensure proper verification of test/exam attendance, each student will be required to sign an attendance sheet upon entering the exam venue. The attendance sheet will include fields for the student's name, student ID, date, and time of entry. The teaching staff will oversee this process and monitor the signing of the attendance sheets.

- Students who have ADA accommodations should make arrangements to register for their exam with the [Center for Disability and Access](#) (CDA) at least one week before the scheduled test time. This proactive step ensures that appropriate accommodations are in place to support the needs of students with disabilities during the examination. By registering in advance, the CDA can work collaboratively with the students and the instructor to provide the necessary accommodations and create an inclusive testing environment that allows all students to demonstrate their knowledge and abilities on an equal basis.

**Pre-class Canvas quizzes:** To promote thorough preparation before each class meeting, regular Canvas quizzes are assigned based on watching designated videos. These quizzes are essential for students to familiarize themselves with the course material before attending class. For further guidance on preparing for class meetings, students can refer to [How to prepare for class meetings](#). To accommodate potential travel, illness, quarantine, or other situations, the four lowest Canvas quiz scores for each student will be dropped. This allows students to manage unforeseen circumstances without penalizing their overall performance. It is important to note that no extensions will be granted for pre-class quizzes as they are auto-graded. Hence, students are encouraged to plan accordingly and complete the quizzes within the assigned timeframe to ensure they are well-prepared for each class meeting.

**Homeworks:** Homework assignments are posted on Canvas and should be submitted through Gradescope. Clear instructions and deadlines for each homework will be posted on Canvas for students' reference. To allow for flexibility, students can make multiple submissions on Gradescope until the deadline, as determined by Gradescope's timestamp, which may differ from the student's local clock. However, no submissions will be accepted after the specified deadline. There are 6 homework assignments. As an accommodation for unforeseen circumstances such as forgetfulness, illness, or other reasons, the lowest homework score will be dropped for each student. Each remaining 5 homework assignment contributes the same number of points towards the final course grade, i.e., homeworks are equally weighted regardless of the number of questions in each homework. This approach gives students some leeway and acknowledges that occasional challenges may arise during the semester.

Students are advised to **start working on the homework early and give themselves plenty of time to think about the material**, planning to work on the assigned problems a little each day and asking questions when they get stuck. This way, students can finish the homework in bite-sized pieces. If students wait until the deadline, the homework can suddenly seem overwhelming. Homework must be submitted independently. It is acceptable for students to discuss how to solve problems with classmates, but copying solutions is considered academic misconduct — see the Academic Misconduct section below.

It is the student's responsibility to ensure the successful and timely submission of each assignment via Gradescope — start early and follow the instructions carefully. Neither computer or Gradescope issues nor corrupted or missing files are grounds for deadline extensions or resubmissions; therefore, students are advised to submit at least one hour before the deadline (even if the submission is incomplete), as well as double-check their submissions.

**X-in-Practice homeworks:** To foster connections between abstract mathematical concepts and practical CS-related applications, the teaching staff will craft lightweight homework problems that involve algorithmic thinking and programming. These assignments will serve as opportunities for students to apply their mathematical knowledge to real-world scenarios in computer science. Students are given the freedom to utilize their preferred programming language for solving these problems. Additionally, they are strongly encouraged to provide comprehensive documentation for their code, emphasizing the importance of clear explanations and a thorough understanding of their implementations. This approach aims to enhance students' problem-solving

skills and facilitate a deeper understanding of the relevance of abstract mathematical concepts in the context of computer science.

## Class Schedule

**Modules:** CS 2100 is structured around six modules covering various topics:

1. **Logic:** This module delves into the fundamentals of logic, including propositional logic and predicate logic. Students will learn about logical operators, truth tables, implications, and laws for proving logical equivalence.
2. **Sets, functions, and relations:** In this module, students will explore the concept of sets, functions, and relations. Topics covered include set operations, set cardinality, function properties, and different types of relations and their properties.
3. **Graph theory:** This module focuses on studying graphs and their properties. Students will learn about graph representations, graph algorithms, and various graph-related concepts.
4. **Combinatorics:** Combinatorics involves counting and arranging objects. This module covers topics such as permutations, combinations, and binary sequences.
5. **Probability:** Probability theory introduces students to the concept of uncertainty and the study of random events. Topics include random variables, conditional probability, basic probability rules, Bernoulli trials, and expected values.
6. **Proofs:** The final module emphasizes proof techniques and methods used in mathematics and computer science. Students will learn how to construct and present mathematical proofs, including direct and indirect proofs.

For more detailed information, including the schedule of lectures, discussions, homework due dates, grades, and test timings, students should refer to the [Class Schedule](#) provided for CS 2100 on Canvas. This schedule will provide a comprehensive outline of the course structure and help students plan their studies effectively.

Please note that the schedule for CS 2100 may be subject to variations during the semester to accommodate the pace of progress. As the course unfolds, the instructor may make adjustments to ensure that all topics are adequately covered and that students have sufficient time to grasp the concepts effectively. The modifications to the schedule will be made with the students' learning experience in mind and to ensure that the course content is delivered comprehensively. Students are advised to stay updated with any changes communicated by the teaching staff on Canvas under Announcements.

**Homeworks:** Each module will have its designated homework, X-in-Practice homework, and supplemental homework. The homeworks for each module will be released on Canvas on the day of the first lecture covering that specific module. Both the module's regular homework and X-in-Practice homework will be due on the first Friday after the material for that module has been covered, except for the last module, whose homework is due on the Monday of the last week of classes. Throughout the semester, links to the homework assignments and other relevant materials will be provided on Canvas. Students can access these resources to stay organized and keep track of the due dates for each module's homework. It is essential to regularly check Canvas for updates and new materials to manage their coursework effectively.

**Intro survey:** On the first day of class, students will be required to complete an introductory survey as part of the zeroth homework for the course. The survey is due on the Friday of the first week of classes and it is worth 0.5 point of the total of 100 points as extra credit. The purpose of the survey is to allow the instructor to get to know the students better, understand their diverse backgrounds, and identify their individual interests. By gathering this information, the instructor can tailor the course better to suit the needs and preferences of the students. The introductory survey is designed to be brief and will take no more than 10 minutes to complete. It provides students with an opportunity to introduce themselves and share relevant information about their

academic background, experiences, and any specific interests they may have in the subject matter. This information will aid the instructor in creating a positive and inclusive learning environment, facilitating effective communication, and supporting the academic journey of each student throughout the course.

## Submitting Homeworks

**Options for writing solutions:** To work on the homework, there are a few options:

- Students must submit their solutions in a PDF file.
- Students can submit hand-written solutions (scanned in PDF), as long as they are neat, organized, and readable (written using a black pen). Students should check:
  - the scan has a high enough contrast to be easily read;
  - the scan has a high enough resolution to be easily read;
  - the handwriting is large enough to be easily read;
  - the handwriting is neatly written; and
  - the scanned file is a manageable size, so we don't spend forever downloading it.
- Only solutions that are readable/illegible will receive points.
- Alternatively, students can use the provided WORD template or the LATEX template to add their solutions, then submit a converted/compiled PDF.
- Students can also download the provided PDF and use Adobe or Preview (or similar tools) to edit their solutions directly on the PDF file.
- Please only put one problem on each page. If more space is needed for a problem, use a blank piece of paper or a blank digital page.
- Please only use a single page for one problem.

**LaTeX (optional):** If students would like to use LaTeX (which is not required) to write their solution, here is a [quick guide](#). The easiest tool to use is [Overleaf](#), an online LaTeX editor.

**Submissions via Grapescope:** All homeworks must be submitted through Grapescope. Do not submit assignments via email. The following is enforced for each homework submission:

- Each homework should contain at least two pages.
- The page number containing the answer to each homework question should be specified during submission (via Gradescope). Students must do this "matching" process for us to be able to grade their assignments.
- If the submission contains only 1 page; that is, if no pages are specified for each answer, then 20% is deducted from the homework score.

Students must ensure that their submission is properly indexed with the correct page numbers for each question. This can be made easier if students do not have answers overflowing onto the next page.

**Submission deadline:** The submission deadline is midnight at 11:59 pm MDT. Occasionally, students try to submit their work close to the deadline and can't, whether because of a bad Internet connection or their machine freezing or different clocks or something else. Don't let this happen to you: **submit early**.

**Getting help with Grapescope:** For students who have not used Gradescope prior to this course, here is a [video tutorial outlining the submission process](#). There is a [PDF guide](#) as well.

**Getting help with homework:** Students should use Piazza and/or TA office hours if they have any questions.

## Late Work

**Homeworks:** All homework assignments are due on Friday at 11:59 pm, except the last homework, which is due the Monday of the last week of classes. Every student gets an automatic 2-day extension on homework

assignments. Students do not need to contact the teaching staff for extensions. Since homework assignments already come with an automatic 2-day extension, additional extensions will not be arranged for any reason other than a documented medical emergency or a family emergency (see Documented Emergency below). They are evaluated on a case-by-case basis.

**Tests and quizzes:** No extensions are available on tests or pre-class quizzes.

**Final exam:** The final exam time is set by the university and cannot be changed for any reason.

## Documented Emergency

The instructor recognizes that medical emergencies may impact a student's ability to participate in the course or submit assignments on time. However, homework deadline extensions or make-up exams will not be arranged for any reason other than a documented medical emergency.

A documented medical emergency requires verifiable proof from a doctor's office or a positive COVID-19 test result (within a reasonable timeframe). Merely obtaining a COVID-19 test is not considered a medical emergency. The required documentation should be provided to the instructor at least 1 day before the assignment deadline.

Approval for extensions or make-up exams is not automatic and will be evaluated on a case-by-case basis, even with proper documentation.

Once approved for a medical emergency, the student will receive a 5-day extension (including weekends) for the relevant homework assignment. A make-up exam is typically expected within 5 days of the original exam date. In extreme cases (evaluated case-by-case), a longer timeframe is possible, not exceeding 10 days. If the student cannot take the exam after 10 days (including the day of the exam), no make-up exam will be possible. The regrading period for a make-up exam is between the time the score for a make-up exam is released and the standard regrading period. Therefore, a make-up exam may have a shorter regrading request period due to the class schedule.

For documented emergencies other than medical ones (e.g., power outage), students should email the instructor with supporting proof (e.g., communication from the power company). Approval for such emergencies is also subject to evaluation on a case-by-case basis and is not automatically guaranteed.

If a student requires an ADA accommodation due to a disability, they should contact the Center for Disability and Access (CDA). CDA will collaborate with the instructor to determine appropriate and reasonable ADA accommodations as needed.

## Grading

**Homeworks grading:** For each homework assignment, each individual question is graded according to the following four-tier scale:

- 3/3 points: Correct. The submission is correct.
- 2/3 points: Partial Correct. The submission shows reasonable effort, and it is mostly correct.
- 1/3 points: Incorrect. The submission shows reasonable effort; however, it needs to be corrected.
- 0/3 points: No Submission/Unreadable/Trivial. There is no submission, or it is unreadable, or the answers provided need to show reasonable efforts (a.k.a. trivial).

**Grades posting:** Homework grades will be posted on Canvas within 1 week after the homework due date. Pre-class quiz grades will be posted the same day as they are auto-graded. The final course grade will be posted on Canvas before the grades' due date by at least 3 business days.

**Regrading policy:** Students who wish to appeal a score on a homework assignment or a midterm test must do so within one week of receiving the score via Gradescope, except for the last two homeworks (check [Class Schedule](#)). Later regrade requests will not be considered. Regrading request for the final exam should be submitted within 24 hours after the score is published due to the tight time frame for posting the final course grade.

Students are required to provide concert reasons why they disagree with the grade. Regrading is expected to result in either no change in grade or a change in grade (more or fewer points) if there was a grading mistake. The teaching staff has the right to regrade the entire homework or test and change the grade if they feel the student was erroneously awarded too many or too few points on other problems.

### **Grading for this course:**

The default option for grading will be as follows:

- Pre-class quizzes: 5%
- Homeworks: 20%
- X-in-Practice homeworks: 5%
- Midterm tests: 40%
- Final exam: 30%

The growth-mindset option for grading will be as follows:

- Pre-class quizzes: 5%
- Homeworks: 20%
- X-in-Practice homeworks: 5%
- Midterm tests: 30%
- Final exam: 40%

**Extra credit:** In this course, students have the opportunity to earn extra credit through various means:

- All students receive 0.5 points as extra credit if the student course feedback response rate reaches 80% of the class. This incentivizes active participation in providing feedback, which is crucial for enhancing the learning experience.
- Similarly, all students receive 0.5 points as extra credit if the response rate for the mid-semester survey(s) reaches 60% of the class. Engaging in the survey process helps the instructor gather valuable insights for improving the course.
- Students receive 0.5 points as extra credit if they pass the zeroth homework. This encourages students to diligently complete the introductory survey and set a positive tone for the rest of the course.
- Additionally, students can earn up to 1.5 points as extra credit for solving designated problems in the supplemental homeworks. This rewards students who go above and beyond in their engagement with the course material and seek to deepen their understanding through further problem-solving.

The extra credit opportunities provide students with a chance to boost their overall grades by actively participating and demonstrating a commitment to their learning journey.

**Benefits and conditions of exercising the growth-mindset option:** In CS 2100, students occasionally face challenges with early tests, leading some to withdraw (officially or unofficially) from the course due to concerns about their ability to achieve a passing grade (C- or better) for the semester. However, it is important to note that the course material is naturally cumulative, with each module reinforcing concepts from the previous ones. Many students who initially struggle tend to show significant improvement as they practice and build upon concepts in later modules, particularly leading up to the final exam.



To foster a growth mindset among students and encourage them to persevere through difficulties, a second option for calculating the final course grade is available. Under this growth-mindset option, the student's final course grade will be based on the higher of two calculations: the default option (traditional grading based on performance throughout the course) and the growth-mindset option (factoring in the improvement demonstrated by the student over time).

This approach recognizes that students may experience setbacks or challenges at the beginning of the semester but can make substantial progress as they engage with the course material and build their skills and understanding. It empowers students to focus on their learning journey, embrace challenges as opportunities for growth, and work towards achieving their full potential.

By providing the growth-mindset option, the instructor aims to foster resilience, confidence, and determination among students, ultimately promoting a positive and supportive learning environment. Students are encouraged to approach the course with a growth mindset and seize the opportunity to improve and succeed throughout the semester.

Please note the following:

- Canvas is configured to use the default grade calculation. For any student with a higher course grade using the growth-mindset calculation, the grade is entered manually at the end of the semester.
- If the University transitions to requiring final exams be administered remotely (i.e., not in person), the default calculation is to be used for all students.

For more information on adopting a growth mindset, see [the resources provided by the University Student Success Advocates](#) (expand the Mindset section).

**Conduct violations:** Students who are found to have violated the conduct of this class, as stated in the "Academic Misconduct" section, will be given a failing grade.

**Grading scale:** This class uses the grading scale shown below.

Letter	Scoring
A	100% – 93%
A-	92.99% – 90%
B+	89.99% – 87%
B	86.99% – 83%
B-	82.99% – 80%
C+	79.99% – 77%
C	76.99% – 73%
C-	72.99% – 70%
D+	69.99% – 67%
D	66.99% – 63%
D-	62.99% – 60%
E	59.99% – 0%

**No rounding or curving:** Please note that there will be no rounding or curving of grades in this course. Final grades will be calculated strictly based on the points earned throughout the semester, without any adjustments to individual scores.

## Changes to the Syllabus

This syllabus is not intended to be a legally binding contract. Instead, it serves as a comprehensive outline and guidance for the course. Please be aware that the instructor retains the right to modify the syllabus at any time, provided reasonable notice of the changes is given to the students. Additionally, the Class Schedule may be adjusted as necessary to meet the specific needs of the class. Any updates or alterations will be communicated during lectures and/or posted on Canvas under Announcements.

If a student has any inquiries or uncertainties about the syllabus, it is the student's responsibility to reach out to the instructor for clarification. Open communication with the instructor is encouraged to ensure a clear understanding of course expectations and policies throughout the semester.

**Students will be notified of any changes to the Syllabus.**

## COVID-19 Policy and Campus Guidelines

COVID-19 Vaccination, indoor masking during high transmission, and frequent COVID testing are strongly encouraged. Please visit the [Syllabus page](#) on the Canvas class website under "University Policies" for the latest COVID-19 Campus Guidelines. Also, visit [coronavirus.utah.edu](https://coronavirus.utah.edu) for the most up-to-date university policies.

**Positive COVID-19 Tests:** Any student who tests positive for COVID-19 must self-report via [coronavirus.utah.edu](https://coronavirus.utah.edu).

**Exposure:** According to the University policy, please self-report exposure and wear masks. [Login - University of Utah IT Portal](https://portal.uofu.edu/service-now.com)[uofu.service-now.com](https://portal.uofu.edu/service-now.com)

**Latest recommendation on COVID quarantine:** "People with COVID-19 should isolate for at least 5 days, and if they are asymptomatic or their symptoms are resolving (without fever for 24 hours), follow that by 5 days of wearing a mask when around others to minimize the risk of infecting people they encounter."

**Vaccinations:** We *strongly advise* that students get vaccinated, including all doses. The mRNA vaccines (Pfizer and Moderna) are unusually safe and effective, even compared to other vaccines. If a student has not been vaccinated, they can walk in to most pharmacies (like Walmart, Costco, Smith's, Harmon's, Walgreens, or CVS), or schedule a shot at U Health (the Pharmacy near 1300 E, the Madsen clinic, or the Hospital). The vaccine is totally free, whether or not the student has insurance.

**Absences:** If a student is sick, whether with Covid, with vaccine side-effects, a cold, or anything else, please do not come to class. This applies if the student has a positive Covid test, but also if they are just feeling ill. Besides cases of illness and other emergencies, though, attendance is expected; the class will not be recorded, and accommodations for absences will not be routinely made.

**If you are sick:** Do not come to class. Do still watch the videos assigned, and still complete the pre-class quizzes. After class, go through the posted slides and attempt to solve each practice problem before looking at the solution. We recommend setting a 3-minute timer before each problem to make sure you give it a solid attempt. Do not come to the discussion section either; those slides will be posted too. If you need additional help, attend a Zoom office hour or ask for help over Piazza. If you find yourself sick enough that you cannot work, remember that one homework, one test, and four quizzes are dropped from your grade.

## Academic Misconduct

The purpose of the homework assignments in this course is to enhance the students' problem-solving skills and demonstrate their comprehension of the class material. Collaboration with fellow classmates for understanding problems and class concepts is permitted, allowing students to discuss high-level strategies for solving homeworks and pre-class Canvas quizzes. However, each student is required to individually write and formulate their own answers for the assignments.

When submitting their homework, each student must provide a list of the names of the classmates with whom they discussed the homework problems. This encourages transparency and acknowledges collaborative efforts in the learning process.

It is crucial to emphasize that each student is responsible for creating their own original work. Submitting another student's work as one's own constitutes academic misconduct and will result in failing the course. Upholding academic integrity is of utmost importance, and all students are expected to maintain honesty and individual effort in completing their assignments.

**Academic honesty and use of generative AI.** Students are expected to adhere to University of Utah policies regarding academic honesty, including but not limited to refraining from cheating, plagiarizing, misrepresenting one's work, and/or inappropriately collaborating. This includes using generative artificial intelligence (AI) tools without citation, documentation, or authorization. Students are expected to adhere to the prescribed professional and ethical standards of the profession/discipline for which they are preparing. Any student who engages in academic dishonesty or who violates the professional and ethical standards for their profession/discipline may be subject to academic sanctions as per the University of Utah's Student Code: <https://regulations.utah.edu/academics/6-410.php>

**Cheating is taken very seriously.** The teaching staff routinely checks submissions for signs of unauthorized collaboration. The instructor also has privileged access to online resources that can track students asking online questions related to the course homeworks and quizzes.

**Definition of academic misconduct:** As defined in the [University Code of Student Rights and Responsibilities](#), academic misconduct includes, but is not limited to, cheating, misrepresenting one's work, inappropriately collaborating, plagiarism, and fabrication or falsification of information. It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct. A primary example of academic misconduct is submitting as one's own, work that is copied from another student or an outside source. (See [Cheating Policy](#)).

### Academic misconduct is not:

- Communicating with classmates about homework orally, in a spoken language like English.
- Discussing the course material with others, so that they and you may understand it better.
- Using the web and other resources for instruction beyond class, but not for outright solutions to homeworks or pre-class Canvas quizzes.
- Working with a tutor, provided the tutor does not complete a homework or pre-class Canvas quiz for you.

### Academic misconduct is:

- Using generative AI tools, including ChatGPT, Google's Bard, and Perplexity, to autocompleted work is academically dishonest, violates the University policies, and could possibly lead to various repercussions.

- Asking a classmate to see their solution to a homework or pre-class Canvas quiz before submitting your own.
- Viewing a classmate's solution and basing your own solution on it.
- Giving or showing to a classmate a solution when it is them, and not you, who is struggling to solve it.
- Providing or making available solutions to individuals who might take this course in the future.
- Posting questions about homeworks or pre-class Canvas quizzes to any forums other than the Piazza class designated for this semester of CS 2100.
- Posting solutions anywhere.
- Searching for or soliciting outright solutions, including from students who took this course in the past.
- Splitting a homework's workload with another individual and submitting a combination of their work and yours.
- Looking at other students' work during a test or the final exam.
- Searching for, soliciting, or viewing test or final exam questions or answers prior to taking that test/exam.
- Using resources during a test or final exam beyond those explicitly allowed in the instructions.
- Paying or offering to pay an individual for work that you may submit as (part of) your own.
- Intentionally submitting a corrupted file as a scheme to get more time to work on a homework.

**A good rule of thumb:** In this course, if you engage in discussions with others regarding a homework assignment or a pre-class Canvas quiz, it is crucial to refrain from writing or typing anything during those discussions. By doing so, you ensure that your final solution is entirely your own, genuinely reflecting your understanding of the course material. This practice promotes academic honesty and integrity, as your submitted work represents your individual effort and comprehension.

**Uncertain about something:** If you ever find yourself uncertain about what constitutes academic misconduct, you are strongly encouraged to reach out to the teaching staff for clarification. There is no penalty for seeking guidance and seeking clarification on any particular action, even if it pertains to academic misconduct. Proactively seeking assistance and understanding the boundaries of academic integrity help maintain an environment of trust and uphold the principles of fair and ethical academic conduct throughout the course.

**Sanction for academic misconduct and appeals process:** For academic misconduct in CS 2100, the sanction is to fail the course. Upon discovering the misconduct, the instructor discusses the infraction with the student within 20 days. Within the next 10 days, the instructor gives written notice to the student describing the sanction and advising them of their right to appeal. The instructor also notifies the Director of the School of Computing and the Senior Vice President of Academic Affairs of the infraction and the sanction. Finally, a letter describing the infraction is placed in the student's School of Computing academic record. As described in the [College of Engineering Academic Appeals and Misconduct Policy](#), the student has the right to appeal any academic action they feel is arbitrary and capricious.

**Academic misconduct statement:** Students are required to refer to the updated KSoC (CS/DS) undergraduate handbooks at <https://handbook.cs.utah.edu> on academic misconduct, which summarizes the School's policy. In accordance with the School of Computing's *Policy Statement on Academic Misconduct* dated January 10, 2012, the instructor will discuss the School's academic misconduct policy in the first two weeks of the course. Links to the policy statement is: [https://www.cs.utah.edu/docs/misc/cheating\\_policy.pdf](https://www.cs.utah.edu/docs/misc/cheating_policy.pdf)

**Strikes policy:** The School of Computing has instituted a two-strikes and you're out cheating policy, meaning if you get caught cheating twice in any KSoC classes, you will be unable to take any future KSoC courses, and you will be dismissed from an KSoC degree program. Two lesser sanctions (anything less than a failing course grade) now accumulate to equal one "strike". Students with one strike may not be assigned as TAs.

For a complete description of academic misconduct, please refer to the KSoC academic misconduct policy <https://www.cs.utah.edu/undergraduate/current-students/policy-statement-on-academic-misconduct/>.

For KSoC academic policies, please refer to <https://handbook.cs.utah.edu/2023-2024/CS/Academics/policies.php>

For a detailed description of the university policy on cheating, please see the University of Utah Student Code: <http://www.regulations.utah.edu/academics/6-400.html>.

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### Appeals for Grades and Other Academic Actions

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If a student believes that an academic action is arbitrary or capricious, they should discuss the action with the involved faculty member within 20 days and attempt to resolve it. If unable to resolve, the student may appeal the action in accordance with the following procedure:

- Appeal to Department Chair, who should be notified in writing within 40 working days; chair must notify the student of a decision within 15 days. If the faculty member or student disagrees with the decision, then,
- Appeal to Academic Appeals Committee (see flyers posted in MEB and EMCB for committee members). See II Section D, Code of Student Rights and Responsibilities for details on Academic Appeals Committee hearings.

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### Other Policies and Guidelines

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Students are bound by the following policies and guidelines:

- CS 2100 academic misconduct policy detailed in this Syllabus document
- [School of Computing policies and guidelines](#)
- [College of Engineering guidelines](#)
- [University of Utah Student Code](#)

Students should read and understand each of these documents, asking questions as needed.

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### Kahlert School of Computing Code of Conduct

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The open exchange of ideas and the freedom of thought and expression are central to the aims and goals of the Kahlert School of Computing. We are committed to providing a harassment-free, accessible, inclusive, and pleasant learning environment with equity in rights for all, where every student feels welcome, included, and safe. This commitment applies to all members of the School of Computing community regardless of age, sex, gender, gender identity and expression, sexual orientation, (dis)ability, physical appearance, race, ethnicity, nationality, marital status, military status, veteran status, religious beliefs, dietary requirements, medical conditions, pregnancy-related concerns, or childcare requirements. We also respect any other status protected by federal law. We do not tolerate harassment of others in any way, shape, or form. We expect all interactions between students, faculty, and staff to be respectful and constructive, including interactions in classrooms, labs, CADE, and virtual spaces.

Reports of discrimination, harassment, or sexual misconduct should be made to the Office of Equal Opportunity & Affirmative Action, [oeo.utah.edu](http://oeo.utah.edu), 383 South University St, Level 1 OEO Suite, 801-581-8365.

Students preferring confidential support for discrimination, harassment, or sexual misconduct should reach out to a Victim Survivor Advocate (<https://wellness.utah.edu/victim-survivor-advocacy>), the University Counseling Center (<https://counselingcenter.utah.edu>), the University Hospital Chaplains (<https://healthcare.utah.edu/locations/hospital/services/spiritual/>), or the Women's Resource Center

(<https://womenscenter.utah.edu>). Note that with the exception of these four resources, employees of the University, including tutors and TAs are Mandatory Reporters required to report these instances.

Students concerned because of an issue they are experiencing in a class (no published office hours, classes canceled for a week or more, etc.), should [email\\_ugrad-concerns@cs.utah.edu](mailto:email_ugrad-concerns@cs.utah.edu) (undergraduate students) or [grad-concerns@cs.utah.edu](mailto:grad-concerns@cs.utah.edu) (graduate students). Messages to each email address are read by one academic advisor who keeps the student's identity private, as needed, to support them and work to resolve the concern.

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### Student Mental Health Resources

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Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, reach out for [campus mental health resources](#), including counseling, training, and other support. Be on the lookout for your classmates as well. If you see someone struggling, ask how you can help, and if appropriate remind them that these resources exist.

Consider participating in a [Mental Health First Aid](#) or other [wellness-themed training](#) provided by our Center for Student Wellness and sharing these opportunities with your peers, teaching assistants, and department colleagues.

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### ADA Statement

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The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations, such as alternative formats for all materials. Please request via the CDA, because the course instructors are not equipped to assess your individual needs.

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### Institutional Policies and Resources

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On the [online Canvas class website](#), you can find [up-to-date information](#) about drop & withdrawal, plagiarism, and health & safety, some of which are included below.

**Student Success:** The University of Utah has several offices to help you be successful. Please look over this collection of resources:

<https://studentsuccess.utah.edu/resources/student-support/>

**Safety:** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

**The Americans with Disabilities Act.** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

**Personal conduct:** Students are expected to behave in a manner that respects other students, the staff, and the faculty. Furthermore, violence and/or harassment based on sex and gender (which includes sexual orientation and gender identity/expression), as well as race, national origin, color, religion, age, status as a

person with a disability, veteran's status or genetic information is a civil rights offense and may be subject to University honor/conduct violations and legal prosecution.

If you or someone you know has been harassed or assaulted, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066.

For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776.

To report to police, contact the Department of Public Safety, 801-585-2677(COPS). Additional information regarding reporting and victim supportive resources are available at the offices listed above.

**Wellness, resiliency, self-care, and productivity:** Maintaining or adopting new ways to proactively practice "self-care" can help maintain or improve your overall wellness and resiliency, which is valuable both for its own sake and because it can help you succeed academically. Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness; [www.wellness.utah.edu](http://www.wellness.utah.edu); 801-581-7776.

General strategies for wellbeing include things like: getting enough sleep on a consistent schedule, getting enough exercise and sunlight, interpersonal contact, separation of "work" and "play" time and spaces, accountability structure (e.g., regularly attending lecture), and practicing time management (so that you know what you should be working on when, that you have enough time to get things done based on how things are going, and that you can put work down at the end of the day).

We encourage you to dedicate some intentional time to better understand what helps you feel (and do!) your best so that you are well-equipped for whatever the year brings.

The University has resources like:

- [Center for Student Wellness](#)
- [Mindfulness Center](#)
- [Online Fitness Services at Campus Recreation Services](#)
- [University Counseling Center](#)
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...However, you don't need to be limited by looking through the resources offered by the university!

**Student support:** Please visit [Course Resources](#) on Canvas to learn more about support for students of all backgrounds.

If English is your second language, please be aware of several resources on campus that will support you with your language development and writing. These resources include: the [Department of Linguistics ESL Program](#); the [Writing Center](#); the [Writing Program](#); the [English Language Institute](#). Please let me know if there is any additional support you would like to discuss for this class.