

CS 472/672: Software Product Design and Development I

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Fall 2025

Section 1, Time and Location: T-R 1:00 - 2:15 PM , HOS 282

Office Hours: T-R 11:15 - 1:00 PM

Teaching Assistant

TBD

Final Exam

December 9th: 1:00 p.m. - 3:00 p.m.

UNLV Policy

UNLV general policies for students can be found on the [UNLV policy for students page](#).

Catalog Description:

Current techniques in software design presented with emphasis on architecture first development. Introduction to the processes involved in development. Practice architectural design through a series of homework problems. Students work in teams to prepare the architecture for a software product.

Credits 3

Prerequisites

CS 326 and CS 370 and consent of instructor. Prerequisites must be completed with a grade of C or better. Department consent required.

Notes This course is cross listed with CS 672. Credit at the 600-level requires additional work.

Required Textbooks:

Pro Git, available for free at: <https://git-scm.com/book/en/v2>

The first 3 chapters only are required reading.

Cooperative Software Development, Amy Ko, available for free:

<https://faculty.washington.edu/ajko/books/cooperative-software-development/>

This text is useful as a free supplementary reference.

Web Content Accessibility Guidelines, Me, available for free:

<https://quorumlanguage.com/tutorials/accessibility/wcag2.2A1-2.html>

Only the first four lessons are required reading and will supplement our discussion of newer accessibility approaches and laws in software engineering.

Rationale:

The purpose of this course is to give students an introduction to developing software in a more realistic setting. In the first semester of the course (CS 472), students gather requirements while creating mockups and prototypes. In the second (CS 473), they predominantly implement and deploy software. During both courses, students are required to follow software engineering processes.

Student Learning Outcomes (ABET):

Outcome 1: Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

Every team participates in creating an actual software product. This can be very different than building a "throw away" piece of code in an assignment for a class.

Outcome 3: Communicate effectively in a variety of professional contexts.

At the end of the course, students are required to participate in a group presentation of their project and to make an individual presentation on a portion of the project. The audience consists of professors, industry representatives and other students. Students are assessed based on both their individual and team performance.

Outcome 5: Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

One of the primary goals of this course is to gain experience functioning in a team environment on a software development project. Including the final presentation, the team portion of the project accounts for over one half of the available points.

Assessment (CS 472):

While there are a number of assignments listed for this course, you will be graded by five

primary criteria: 1) the resume, 2) the individual GIT assignment, 3) your team senior project portfolio, 4) your team final presentation, and 5) your individual exam grades. This document and the final presentation will be created and iteratively refined over the course of the semester. Besides these rules, I reserve the right to lower an individual's students grade, all the way to an F, if I determine a student contributed little or nothing to their team project. Similarly, students that show exceptional performance in the student project may have their total course grade increased by up to one letter grade.

Assignments:

- Resume - 50 points
- Git Assignment - 50 points
- Senior Design Portfolio I - 50 points
- Senior Design Portfolio II - 75 points
- Senior Design Portfolio III - 100 points
- Project Presentations - 50 points
- Midterm Exam - 50 points
- Final Exam - 100 points
- Attendance - 50 points

No late exams or assignments will be accepted without prior approval or extraordinary circumstances. Given that all of us are living in extraordinary circumstances by default, let's all be as timely as possible, but give each other some slack.

Assessment (CS 672):

Students in CS 672 do the same course as those in 472, with two exceptions. First, in each project, they must write an additional software management report about their team's project. These reports will include analysis of the repository and other details. Second, the final exam will include additional questions about a research paper that will be provided separately about 2/3 of the way through the course. Students will read this paper, which will be a modern research paper in the field, study its methodology carefully, and be able to answer questions not just about what was done, but about the techniques and procedures inside it. This extra component of the exam will be worth an additional 50 points.

Assignments:

- Resume - 50 points
- Git Assignment - 50 points
- Senior Design Portfolio I - 50 points
- Senior Design Portfolio II - 75 points
- Senior Design Portfolio III - 100 points
- Project Presentations - 50 points
- Midterm Exam - 50 points
- Final Exam - 100 points

- Attendance - 50 points

Potential topics for students:

Students may choose any software engineering relevant topic for the course. However, it must be approved by me. Graduate students are encouraged to collaborate with one another to find interesting and relevant research areas to explore.

No late exams or assignments will be accepted without prior approval or extraordinary circumstances.

Table I: Grade Distribution:

A	Greater than or equal to 93%
A-	90 - 92.9%
B+	87 - 89.9%
B	83 - 86.9%
B-	80 - 83%
C+	77 - 79.9%
C	73 - 76.9%
C-	70 - 72.9%
D+	67 - 69.9%
D	63 - 66.9%
D-	60 - 62.9%
F	Less than 60%

Attendance:

Attendance in the course is required. Broadly, the points will be distributed as a percentage of the recorded days. Attendance will not be taken every day, but your total points will be calculated as the percentage of attended vs missing days. There are two slack days meaning that you can miss an entire week of class for any reason. Thus, if 10 days are recorded and you attended 8 or 9, you would obtain all 50 points. If, however, you attended 6/10 of the recorded days, you now obtain a score $50 * (6 / (10 - 2))$ or 37.5. This is then rounded to the nearest

integer and would thus be 38. Reasonable accommodations for missing class will only be made in exceptional circumstances and will very rarely be granted. However, if you have a serious matter beyond your control, get in touch with me and we can discuss it.

Academic Misconduct

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. Many of us on the computer science faculty share, or copy, very similar statements about misconduct.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>

Department of Computer Science Academic Integrity Policy

Each student enrolled in a course offered by the Department of Computer Science is expected to do his/her own work when preparing written or programming assignments, as well as, examinations. He/She must adhere to the academic integrity policy provided by his/her instructor and the university. It is also each student's responsibility to notify the instructor if he/she becomes aware of any activities that would violate the academic integrity policy of the class. I reserve the right to fail any student, from the assignment or the course, for violating the policy, at my discretion.

Copyright

The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: www.unlv.edu/provost/copyright

ADA Statement:

Students who have special needs or disabilities that may affect their ability to access information and/or material presented in this course are encouraged to contact me or appropriate on campus entities for additional disability-related educational accommodations. Also, ***excellent students with a documented disability are sometimes eligible for internship opportunities***

through a grant program out of the University of Washington. Those students that are interested may optionally get in touch with me about this if they wish.

Disability Resource Center (DRC)

The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895- 0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. If you desire to maintain the confidentiality of your request, please do not approach the instructor before or after class to discuss your accommodation needs.

Incomplete Grades

The grade of I - Incomplete - can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor and the Department, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

Tutoring

The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex (SSC). Students may learn more about tutoring services by calling 702-895-3177 or visiting the tutoring web site at:

<http://academicsuccess.unlv.edu/tutoring/>

UNLV Writing Center

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895- 3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>

UNLV Library Resources

Students may consult <https://www.library.unlv.edu/consultation> with a librarian on research needs. For this class, the subject librarian is Sue Wainscott. See: https://www.library.unlv.edu/contact/librarians_by_subject for more information. UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu>.

Rebelmail

By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. Emailing within WebCampus is acceptable.

Final Examinations

The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.

Caveat:

The schedule and procedures for this course are subject to change. It is the student's responsibility to learn of and adjust to changes.

Artificial Intelligence:

Recent tools in artificial intelligence have meaningfully altered the landscape of how students might choose to work. Tools such as these may be useful in that they can provide guidance on writing, hints for technical solutions, and in some cases actual "solutions" to questions that may or may not be correct. For this course, AI solutions are allowed for purposes similar to using search engines. You may use them to look up first draft and possibly incorrect information and as a sounding board for completing tasks. The following provides a rough guide for the types of activities that would be allowed or not for AI in the course.

Allowed

- Using AI similar to a search engine, where you ask it questions and try to learn from its responses
- Using AI to locate academic papers that you will then go read
- Using AI, or other tools in the same vector as grammar or spelling checking

Not allowed

- Copy pasting from AI to your homework. Grade reduction in this instance will be relative to the infraction, up to and including an F.
- Generating the writing for your term papers (Automatic F)
- Generating fake academic references or literature, of any kind (Automatic F)
- Completing an exam with AI (Automatic F)

Students found to be violating the AI rules may have their grade reduced, depending on the seriousness of the infraction, as far down as an F. In the above list, any item marked as such will receive an automatic F in the course. Further, depending on the severity of the infraction, students violating the rules may be reported to the university for academic misconduct. The point is that search engines, online resources, or newer AI techniques can sometimes be useful, but the point of a class is to learn, not to show you can type into a website and copy paste what it told you. Further, just because AI says it does not make it true and it is crucial that you can tell the difference.

Illness:

Sickness broadly can cause serious problems for all of us, students and faculty alike. It is possible that any of us this semester will have even more serious health or life challenges. Please keep this in mind when interacting with students, faculty, and others. A little bit of kindness and understanding goes a long way. Further, as you have multiple days to miss attendance without penalty, there is no need to email me that you are sick. If you have an illness that is very serious and would cause you to miss far beyond the accepted minimum, feel free to get in touch.