

CSPB 3308 - Software Development

Methods and Tools Syllabus

Course Information

Instructor Information

Instructor: Sreesha Nath (she/her)

Email: sreesha.nath@colorado.edu

Preferred Method of Contact:

Piazza should be used for all class related matters. If you are uncomfortable asking questions in public, you can post anonymously (to your classmates) in Piazza).

You should use a private post to the instructors when the issue is private.

Course Description

Covers tools and practices for software development with a strong focus on best practices used in industry and professional development, such as agile methodologies, pair-programming and test-driven design. Students develop web services and applications while learning these methods and tools.

Learning Goals

Specific Goals for the Course:

- Learn and use new software development tools; understand technical documentation for software tools
- Work in small, distributed groups on software projects
- Lead Agile development teams
- Write functional web applications
- Use distributed version control fluently, including merging and branching
- Write unit tests and use test-driven design to build software
- Compose SQL queries to access data
- Write clear and helpful documentation

Prerequisites

CSPB 2270 - Computer Science 2: Data Structures

Required Texts

See Week 0 Moodle page for links to reading material.

Technologies

Students should have access to a Chrome browser and a computer that they can use for development. We will install various data systems and tools throughout the course. Students should have a basic proficiency with a computer and be able to install programs on their machine.

Grading Categories

Assessment	% of Grade
Reading and Lecture Quizzes	10%
Exams	20%
Individual Labs	24%
Team Project	46%

Reading and Lecture Quizzes

Moodle quizzes to review the material presented in the weekly reading assignment and weekly video lecture assignments.

Each week's quiz over the material is due at the beginning of the next week.

Exams

Two midterms, no final exam. The exams assess your knowledge of the concepts and theory up to that point in the course.

Individual Labs

Short weekly assignments to encourage learning. There is one general lab per week of the course, due every Wednesday. Labs are practical exercises to work with the tools and methods of this class. These labs are more learning than assessment, and I encourage students to ask for help and discuss solutions on Piazza. Each assignment must be completed and submitted via Moodle by its due date to earn full credit.

Team Project

9 graded milestones including the final presentation and final summary report. Points vary by milestone. The team project will have you work together in a team with three or four other students. This project will give you essential practice applying the concepts learned in the course, working as a team to develop a software product. You will decide together on a project, collaborate on creating it, and demo your results in a group presentation. Teams will be assigned based on student schedules.

Piazza

- You are expected to participate in Piazza in this course.
- All course communications will be via Moodle announcements and Piazza posts.
- Please set your communication preferences in the Piazza application.
- Instructors will post starter threads on Monday, use these to keep Piazza organized.
- Use the weekly folders to check in with class activities.
- Instructors may not immediately answer Piazza questions. Please help out your fellow students. We will endorse your posts when they contain good advice.
- Instructors are active on Piazza Monday through Friday during business hours.
- Instructors will try to immediately respond to Piazza posts if they are emergencies (Moodle not working, exam not working, etc.).

Method of Instruction

This is a live course and participation is essential. While there is flexibility in when you access the materials, there are strict weekly due dates - no late work is accepted. You may have access to future assignments if you wish to move faster, however, weekly discussion and instructor support will be focused on the current week.

A variety of materials and approaches will be used including: videos, readings, discussions, quizzes, and writing assignments.

As this is an online course, it requires a good deal of self-discipline and time management skills in order to be completed successfully. It is up to you, the student, to understand the schedule and keep up with the assignments. Make sure you know your deadlines and due dates.

Grading Policies

Submission Policies

Most lab assignments and Project Milestones require updating a GitHub repository (either personal or for your project)

Grading will be done before the subsequent assignment is due or within 6 days of the due date (whichever is first)

Large one time projects may take two weeks to grade.

Individual Check-In

If you have a unique situation that may be affecting your work or class experience or you need clarification of an email, Piazza, or ZOOM exchange, please email your instructor with the subject line "Individual Check-In". Your instructor will email you back to set up a Zoom call to discuss the specific situation and work with you to develop a solution and/or strategy to move forward.

Grading Reviews

Large one time projects may take two weeks to grade.

Any grade review may include a review of all work submitted and your grade may go up or down

All grades are final on the last day of classes. No grade changes will be made after the last days of classes.

Late Work Policy

Late work is not accepted. Update your GitHub repositories often with intermediate work that will earn partial credit.

Grading Scale

All coursework grades are final and will not be changed after the last day of classes. Please review your scores during the semester.

93 - 100	A
90 - 93	A-
87 - 90	B+
83 - 87	B
80 - 83	B-
77 - 80	C+

73 - 77	C
70 - 73	C-
67 - 70	D+
63 - 67	D
60 - 63	D-
0 - 59.9	F

Course Topics

- Unix Shell
- Shell Scripting
- Regular Expressions
- Agile Development Methods
- Makefiles and Build Tools
- Unit Testing
- HTML, CSS, and Javascript
- SQL
- Cloud Computing
- Web Services
- Platform as a Service (PaaS)

Program Policies and University Policies

Service Interruptions and Support

Due to the online nature of this program, there is always the possibility of service interruptions. If you are unable to access the course materials (Moodle, Piazza, etc.), we encourage you to visit <https://www.isitdownrightnow.com/applied.cs.colorado.edu.html>.

For non-urgent issues related to platform support, please contact cscihelp@colorado.edu.

Classroom Behavior

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age,

disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy.

For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

Collaboration Policy

We welcome collaboration! Sharing insights, asking questions, learning by doing, and learning by helping others are essential skills in learning computer science.

Collaboration is discussing ideas of the course with others, sharing insights and extra resources, working through similar questions to an assignment, sharing resources, and helping others. The Piazza forum in your class is an ideal place to share ideas, lead a discussion or be the hero that asks the “dumb question” everyone else is afraid to ask. And Piazza is often a source for content for instructors to include in letters of recommendations. Your leadership, courage, and determination will not go unnoticed.

Collaboration is not:

- “Having a partner.” In particular, Group Projects, or projects that specify “working with a partner” will have individual guidelines.
- One student solving problems 1-4, and another solving 6-10.
- An identical group solution submitted by multiple students.

Unless specified in the assignment, all coursework is individual.

In general:

- You must document resources and collaboration on any assignment. This should be in the form of comments at the start of code and/or within solution notes.
- Cite Your Sources: If you collaborated with someone on an assignment, or if your submission includes quotes from a book, a paper, or a web site, you must clearly acknowledge the source.
- Plagiarism is forbidden. Copying answers directly or indirectly from solution manuals, web pages, or your peers is a violation of honor code. The assignments and code that you turn in should be written entirely on your own
- Copying/soliciting a solution to a problem from the internet or another classmate constitutes a violation of the course's collaboration policy and the honor code and may have serious consequences.
- You may not actively search for a solution to the problem from the internet. This includes posting to sources like StackOverflow, Reddit, Chegg, CourseHero, etc.

- StackExchange Clarification: Searching for basic techniques in Python/C++ is totally fine.
- If you have taken this course prior to this semester and have done some/all of homeworks previous code or previous homework solutions may not be reused. You must start each homework from scratch.
- When in doubt, ask. If something doesn't seem right - you are not sure if you can use a resource or if you are feeling pressure to share a specific solution - please reach out to your instructor.

Note: Other information on the Honor Code can be found at www.colorado.edu/policies/honor.html and <https://www.colorado.edu/sccr/honor-code>.

Requirements for Infectious Diseases

Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all applicable campus policies and public health guidelines to reduce the risk of spreading infectious diseases. If public health conditions require, the university may also invoke related requirements for student conduct and disability accommodation that will apply to this class.

If you feel ill and think you might have COVID-19 or if you have tested positive for COVID-19, please stay home and follow the [guidance of the Centers for Disease Control and Prevention \(CDC\) for isolation and testing](#). If you have been in close contact with someone who has COVID-19 but do not have any symptoms and have not tested positive for COVID-19, you do not need to stay home but should follow the [guidance of the CDC for masking and testing](#).

Accommodation for Disabilities, Temporary Medical Conditions, and Medical Isolation

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see [Temporary Medical Conditions](#) on the Disability Services website.

If you have a required medical isolation for which you require adjustment, please contact your instructor.

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [Honor Code](#). Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology [such as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: honor@colorado.edu, 303-492-5550. Students found responsible for violating the [Honor Code](#) will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit [Honor Code](#) for more information on the academic integrity policy.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits [protected-class](#) discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, [reporting options](#), and [support resources](#) can be found on the [OIEC website](#).

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents related to these policies regardless of when or where something occurred. This is to ensure that individuals impacted receive an outreach from OIEC about their options for addressing a concern and the support resources available. To learn more about reporting and support resources for a variety of issues, visit [Don't Ignore It](#)

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, please contact me directly. See the [campus policy regarding religious observances](#) for full details.

Mental Health and Wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact [Counseling and Psychiatric Services \(CAPS\)](#) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through [Academic Live Care](#). The Academic Live Care site also provides information about additional wellness services on campus that are available to students.