CS-2450-X02 Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: https://catalog.uvu.edu/

Semester: Spring
Year: 2025
Course Prefix: CS
Course and Section #: 2450-X02
Course Title: Software Engineering
Credits: 3

Course Description

Presents concepts, methodology and best-practices necessary to develop large scale software projects. Includes step-wise software requirements analysis, design, implementation, testing and release. Discusses software generation, reuse, scheduling, verification, and maintenance. Emphasizes current "real world" industry best-practices and tools.
Lab access fee of $45 for computers applies.

Course Attributes

This course has the following attributes:
☐ General Education Requirements
☐ Global/Intercultural Graduation Requirements
☒ Writing Enriched Graduation Requirements
☒ Discipline Core Requirements in Program
☐ Elective Core Requirements in Program
☐ Open Elective
Other: *Click here to enter text.*

Instructor Information

Instructor Name: Jeremy Jorgensen

Student Learning Outcomes

1 Develop software using a methodical, repeatable, iterative software development process.
2 Write clear, concise, formal software documents for engineers.
3 Use models and diagrams to communicate the structure and behavior of a system.
4 Compose a variety of professional messages that are tailored for various situations and for diverse audiences.
5 Work within an software engineering team.
6 Create testable software.

Course Materials and Texts

Software Engineering Modern Approaches, Second Edition, ISBN 978-10-4786-3230-6

Course Requirements

Course Assignments, Assessments, and Grading Policy

Grades will be based on the following: (round up at 0.5%)

	Percentage of Grade	Description
10	25%	Assignments (seven total)
2	40%	Team Project (six milestones total)
3	25%	Exams (two total)
4	100%	In-Class Activities (102 total)

Grading Scale:

The grading scale is:

Grade	High	Low
A	1000%	93%
A-	92%	90%
B+	89%	87%
B	86%	83%
B-	82%	80%
C+	79%	77%
C	76%	73%
C-	72%	70%
D+	69%	67%
D	66%	63%
D-	62%	60%

- Unless otherwise noted, individual assignments are due at 1010:59pm on the due date.
- Late homework assignments are accepted with a 100% penalty per day up to a maximum of -50%. After five days, the assignment can be turned in before the end of the semester for (max) 50% credit.
- Group assignments for the project milestones are due at 1010:59pm on the due date and may not be late.

Required or Recommended Reading Assignments

Textbook, slides, video

General Description of the Subject Matter of Each Lecture or Discussion

Week 1: Introduction
Textbook Reading: SEMA -- Chapter 1
Video Week 1
Slides Week 1
Homework 1
In-Class Activity Week 1

Week 2: Software Process and Agile Software Process

Textbook Reading: SEMA -- Chapter 3, 4
Video Week 2
Slides Week 2
Homework 2
In-Class Activity Week 2

Week 3: Software Quality
Textbook Reading: SEMA -- Chapter 2
Video Week 3
Slides Week 3
Group Project Milestone 1
In-Class Activity Week 3

Week 4: Quality in Software Process and Configuration Management
Textbook Reading: SEMA -- Chapter 5, 6
Video Week 4
Slides Week 4
Homework 3
In-Class Activity Week 4

Week 5: Principles of Requirement and Analyzing High-Level Requirements
Textbook Reading: SEMA -- Chapter 10, 11
Video Week 5
Slides Week 5
Group Project Milestone 2
In-Class Activity Week 5

Week 6: Detailed Requirement
Textbook Reading: SEMA -- Chapter 12
Video Week 6
Slides Week 6
Homework 4
In-Class Activity Week 6

Week 7: Principles of Software Design and UML
Textbook Reading: SEMA -- Chapter 15, 16
Video Week 7
Slides Week 7
Group Project Milestone 3
In-Class Activity Week 7

Week 8: Software Design Pattern and Software Architecture
Textbook Reading: SEMA -- Chapter 17, 18
Midterm Exam

Week 9: Detailed Design and Design Quality and Metrics
Textbook Reading: SEMA -- Chapter 19, 20
Video Week 9

Slides Week 9
Homework 5
In-Class Activity Week 9

Week 10:
Spring Break

Week 11: Principles of Implementation
Textbook Reading: SEMA -- Chapter 22
Video Week 10
Slides Week 10
Group Project Milestone 4
In-Class Activity Week 4

Week 12: Quality and Metrics in Implementation
Textbook Reading: SEMA -- Chapter 23
Video Week 11
Slides Week 11
Homework 6
In-Class Activity Week 11

Week 13: Refactoring
Textbook Reading: SEMA -- Chapter 24
Video Week 12
Slides Week 12
In-Class Activity Week 12

Week 14: Formal and Emerging Methods in Requirements Analysis
Textbook Reading: SEMA -- Chapter 29
Video Week 13
Slides Week 13
Homework 7
Group Project Milestone 5
In-Class Activity Week 13

Week 15:
Sample Question and Review

Week 16:
Final Exam
Final Group Project Submission

Required Course Syllabus Statements

Generative AI
Not applicable.

Using Remote Testing Software
☒ This course does not use remote testing software.

☐ This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities
Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU Accessibility Services at accessibilityservices@uvu.edu or 802-863-8747.

Accessibility Services is located on the Orem Campus in BA 220.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 222.

Academic Integrity
At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in UVU Policy 542: *Student Code of Conduct*.

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 206, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 802-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a specially dedicated space for meditation, prayer, reflection, or other forms of religious expression.