Walla Walla University
SEVENTH-DAY ADVENTIST HIGHER EDUCATION

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CPTR 450

Software Engineering

Computer Science — Fall 2025 — Course Syllabus
Schedule: *M/W/F 9:00 a.m.–9:50 a.m.* ***Classroom:*** *KRH327*
Final Exam: December 16, 2:00 p.m.–3:50 p.m.

Instructor Information

Instructor: Chiké Abuah
Email: chike.abuah@wallawalla.edu
Office: KRH 329

Course Overview

Bulletin Description: Overview of the processes used to design, develop, and maintain complex software systems in preparation for the senior project sequence. Students will describe software quality characteristics, the software engineering process, and the development life cycle. Students will also participate in a large team programming project from requirement analysis through deployment and maintenance. Prerequisite: CPTR 242. Corequisite: CPTR 496 or ENGR 496 or permission of instructor.

Students will participate in a software project where they can put all their programming and teamwork into practice. This project is a great place to show off your skills for a future employer.

Expect to invest approximately 30 hours per term per credit for all course related activities. This course is 3 credits.

Required Materials

Reading articles will be provided by the instructor

Student Learning Objectives

- Understand the software engineering process.
- Strengthen programming design and programming skills.
- Gain skills leveraging generative AI for modern software engineering

Attendance Policy

Walla Walla University Attendance Policy

Course attendance is an integral part of a successful WWU education. **Students may receive a failing grade for missing 25% or more of total class periods for late registration or any other reason.** Departments or instructors may adopt and post more stringent attendance policies on their syllabi.

Core Themes

> **Walla Walla University is a community of faith and discovery committed to: Excellence in Thought, Generosity in Service, Beauty in Expression, Faith in God.**

- Collaboration

- Communication

- Teamwork

- Modern Software Engineering

- Generative AI

Course Requirements, Weighting, and Grading

Requirement	Percentage
Class Participation: class attendance and in-class activities	**15%**
Labs: weekly in-class labs	**35%**
Software Project: a group software project	**50%**

No work will be accepted once the course has ended unless the instructor has recorded a grade of "I—Incomplete."

Students may receive a failing grade for missing 25% or more of total class periods for late registration or any other reason. Departments or instructors may adopt more stringent attendance policies.

Letter Grade	Percentage
A	93-100
A-	91-92
B+	89-90
B	82-88
B-	80-81
C+	78-79
C	71-77
C-	69-70
D+	67-68
D	60-66
D-	58-59
F	57 and below

Tips for success

I want you to be successful in this course and promise to facilitate your success by creating and maintaining a challenging but supportive learning environment designed to help you accomplish the learning outcomes outlined above. However, I cannot succeed for you. In order for you to succeed you must actively engage in the course, interact with your classmates, and diligently complete the assigned work. In particular:

- prepare for each class by completing the assigned reading and being aware of announcements;
- attend each class and actively participate in the class activities;
- be proactive in completing labs/assignments and take the initiative to seek out help; and,
- maintain a positive attitude about the class and what you are learning.

Defining Success.

At the end of the quarter the grade earn will be based on concrete evidence that you have accomplished the student learning outcomes given above. Here is what each grade means:

- Students earning an 'A' not only understand but master the course concepts, applications, and theory and show this in many different ways. They come to class prepared, are consistently and actively engaged in class activities, and are ready to move on to further coursework without reservations.
- Students earning a 'B' show evidence of strong understanding of the basic skills and applications covered in the course with evidence of mastery on some topics. They are consistently ready to work and actively engaged in class activities and are ready to move on to further coursework.
- Students earning a 'C' have attained the baseline level of competency required by the course but do not show consistent evidence of mastery or strong understanding. They may take further coursework but with some caution.
- Students earning a 'D' have not attained the baseline level of competency required by the course, although there is some evidence of understanding. They are not yet ready to move on to further coursework.
- Students earning an 'F' have not shown evidence of minimal understanding of the course concepts.

Viewing your Scores

Scores can be accessed at any time in the Brightspace gradebook. Students are responsible for checking their scores on a regular basis and notifying instructors of any discrepancies in a timely manner.

Instructor Responsibility

Evaluation: timeline and coursework

All materials will be evaluated in a timely manner (typically 2 weeks, but more quickly during summer sessions). Exams will be scored and accessible for viewing before the next exam. The score for each class requirement is available in the Brightspace grade book. All evaluated coursework can be reviewed on Brightspace or will be returned to the student.

Progress Reports

Although you are able to determine your tentative course grade at any time, Walla Walla University has a twice-per-quarter alert process to notify students of low academic performance. If you fall into this category you may receive an email offering comments from your instructor on your performance and suggestions for

improvement. All students are encouraged to contact the instructor at any time to discuss your performance in the course.

Course AI Policy

You may use AI tools in this class to help with homework and assignments. Helpful uses include brainstorming, creating outlines, and editing work. I will provide resources for how best to use AI to support your learning process in this class. However, when you use AI, there are a few guidelines you need to follow:

DOCUMENT: If you use an AI tool you need to document your use—including the tool you used, where in your process you used it, and how it contributed to your final submitted work. [Example: I used Gemini to create an outline for my essay. I revised the outline before writing my first draft].

CITE: Along with documentation of how you used AI, you are also required to cite AI if you use any AI generated content in your final submissions—for example text, images, or graphics, generated by AI tools. Treat AI generated content just like other sources such as books, articles, videos, etc. See guidelines below for how to cite AI tools.

INTERACTION RECORD: In certain situations, as part of your documentation and citation, I may ask you to submit the AI generated drafts and a record of your interactions with the tool. Failure to provide this documentation may result in a grade reduction.

Students may also use AI tools during assessments (quizzes, tests, and exams), with appropriate documentation and citation if AI-generated content is included.

If you ever have a question about an appropriate use of AI—please ask me! We will work together to figure out how AI can support your learning journey in this class.

University Policies

Academic Integrity

The WWU Academic Integrity Policy states that “an integral part of the mission of Walla Walla University is to prepare its students to be responsible individuals with Christian values.” We assume that any work you

submit in a class is your own work. This principle of academic honesty is important in any scholarly work. Using another person's material without proper acknowledgment is a violation of academic integrity and cannot be tolerated in an academic institution. Tools such as generative AI or problem-solving software should only be used if explicitly permitted for a particular assignment or class and must always be properly acknowledged. Students should consult the course syllabus for guidelines on the use of these tools and check with the course instructor for additional clarity if needed.

Violations of the academic integrity policy may result in a failing grade for the assignment or for the course. Academic dishonesty offenses are reported to the department or school and to the associate vice president for academic administration.

Religious Accommodations

It is Walla Walla University policy to reasonably accommodate student absences for reasons of faith or conscience, observance of religious holidays, or participation in an organized activity conducted by a religious denomination, church, or organization. The full religious accommodation policy and request form can be found on the WWU website.

Title IX: Sex Discrimination and Sexual Misconduct Policy

WWU prohibits all forms of sex discrimination and sexual misconduct including, but not limited to, sex-based intimidation and harassment, sexual harassment, domestic violence, dating violence, stalking, and sexual violence. If you have been subjected to, or are aware of, an instance of sex discrimination or sexual misconduct, you are highly encouraged to report it to the Title IX coordinator via email at titleix@wallawalla.edu, through the Title IX website at wallawalla.edu/title-ix, or by calling (509) 527-2259. The university has resources to help.

Emergency Procedures

WWU is dedicated to providing a safe campus environment. Emergency preparedness resources are available online to help you prepare for and respond to dangerous weather, fire, an active shooter, an injury, etc. You will also find a link to subscribe to or update your contact information in our emergency campus notification system.

Classroom Policies and Procedures

Late Policy

Deadlines for coursework are indicated in the course schedule. Late work is not accepted. Contact your instructor with as much advance notice as possible if you have extenuating circumstances.

Attendance Policy

Students are expected to attend all class sessions unless arrangements are made in advance. Research indicates that one of the strongest predictors of success is attendance.

Use of Previous Course Material

In the interest of providing equal opportunity to all students, selected materials from previous classes can be found on the Brightspace class site.

Technology Use in the Classroom

You may use technology within the classroom for the purpose of taking notes but it should not be used for non-class related activities. Capturing or recording course information or materials without the instructor's permission is prohibited.

Civility and Professional Conduct

Civility is the art of treating others—and ourselves—with respect, dignity, and care. Civility is apparent when we are sensitive to the impact that our communications, practices, and behaviors have on others, and when we acknowledge each person's self-worth and unique contributions to the community as a whole. Interactions in and outside of class are expected to be professional and respectful. Interacting with other members of the university community offers each of us opportunities for personal reflection and self-correction to assure ongoing professional growth. This is true both in the online environment and in face-to-face settings.

Support Services

Student Development Center—Free Peer Tutoring

Free peer tutoring is available to you in many subject areas. Tutoring is provided through the Student Development Center and can be found on the ground level of Village Hall. Stop by in person or visit wallawalla.edu/peer-tutoring to access the tutoring schedule. Call the Peer Tutoring Coordinator at (509) 527-2313 with any questions.

Disability Support Services

If you think you may have a physical or learning disability adversely affecting your academic performance, first, submit an Initial Accommodation Request Form; then, email DSS@wallawalla.edu to make an appointment to discuss your request with Disability Support Services. They will work with you to provide appropriate accommodations.

Once you have gone through the initial accommodation request and approval process, you are responsible for logging in to Accommodate and submitting a new request during the first two weeks of every quarter. You are also encouraged to discuss your accommodations privately with your professors so they can support your success.

Please note that accommodations are not retroactive. If you do not declare the disability to the DSS office or submit a quarterly request, you may not receive appropriate accommodations. For more information on resources available from Disability Support Services, please visit wallawalla.edu/DSS, call (509) 527-2366, or email DSS@wallawalla.edu.

Student Health and Wellness

Walla Walla University's Health & Wellness Center is committed to your mental health and wellness. Schedule a free counseling appointment and find information about the resources available to support whole-student wellness at wallawalla.edu/wellness or (509) 527-2147.

Additional resources for your health and safety

Resource	Phone Number
WWU Campus Security (Available 24/7)	(509) 527-2222
WWU On-Call Chaplain (Available 24/7)	(509) 527-2010 (ext.1)
WWU Counseling Center	(509) 527-2147
Walla Walla Mental Health Crisis Line (Available 24/7)	(509) 524-2999
National Crisis Text Line (Available 24/7)	Text "HOME" to 741741
Suicide and Crisis Lifeline (Available 24/7)	Text or call 988

If you or someone you know is in immediate danger, call 911.

Information Technology Services – Computer Support Help Desk

For help with accessing Brightspace, your student account, email, or other technical support, contact the Information Technology help desk by calling (509) 527-2317 or emailing helpdesk@wallawalla.edu.

Library Resources

Library resources and services are available at wallawalla.edu/library. You can reach a faculty librarian for research assistance by email at reference@wallawalla.edu or by calling the Library Information Desk at (509) 527-2134.

Technical Requirements

D2L Brightspace

The Desire2Learn (D2L) Brightspace course management system provides course information and can be accessed at class.wallawalla.edu with your WWU username and password. The general hardware specifications necessary for an optimal experience using Brightspace can be found on the WWU distance education website at wallawalla.edu/online.

Supplemental Software

As a WWU student, you have access to download Microsoft 365 products for free with your WWU username and password. This includes Microsoft Teams, Word, PowerPoint, and Excel. You can also download Adobe Acrobat Reader for free.

Course Schedule

The schedule is subject to change at the professional judgement of the instructor.

Week of Worship: Note that during the second week of the quarter, our class meeting time may be adjusted to accommodate the Week of Worship schedule.

Modern Software Engineering with GenAI – Fall 2025

Class Meetings: MWF

Start Date: Sept 29, 2025

The course schedule may change at any time.

Week	Date	Topic
1	Mon Sep 29	Course Introduction
	Wed Oct 1	LEGO City: Introduction to Scrum
	Fri Oct 3	LEGO City: Introduction to Scrum pt.2
2	Mon Oct 6	RAD: RAD; Agile; XP; Scrum
	Wed Oct 8	Prompt Engineering
	Fri Oct 10	High-Level and Low-Level Design
3	Mon Oct 13	Project Management Tools
	Wed Oct 15	Using GenAI Model APIs
	Fri Oct 17	Agentic AI
4	Mon Oct 20	Project: Kickoff
	Wed Oct 22	Service Day
	Fri Oct 24	Project: Set Up
5	Mon Oct 27	AI-Assisted Testing
	Wed Oct 29	Multi-Agent Pipelines
	Fri Oct 31	Project: Update
6	Mon Nov 3	Ethics & Risks in AI-Augmented SE
	Wed Nov 5	Case Studies in AI-Augmented Engineering
	Fri Nov 7	Project: Update
7	Mon Nov 10	Model Context Protocol
	Wed Nov 12	Development; Deployment; Maintenance; Metrics
	Fri Nov 14	Project: Update
8	Mon Nov 17	Documenting and Profiling with AI Tools
	Wed Nov 19	AI-Assisted DevOps & CI/CD Workflows
	Fri Nov 21	Project: Update
9	Mon Nov 24	No Class (Thanksgiving Break)
	Wed Nov 26	No Class (Thanksgiving Break)
	Fri Nov 28	No Class (Thanksgiving Break)
10	Mon Dec 1	Predictive & Iterative Models
	Wed Dec 3	RAD continued
	Fri Dec 5	Project: Update
11	Mon Dec 8	Project: Reflection
	Wed Dec 10	Final Project Workshop
	Fri Dec 12	Course Wrap-Up & Project Presentations

12	Mon Dec 15	Finals Week
	Wed Dec 17	Finals Week
	Fri Dec 19	Project - Repositories

*There is no final exam for this course, although we may use the finals time period for end-of-course presentations.

Final Exam: *December 16, 2:00 p.m.–3:50 p.m.*

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