CPSC 480 Software Engineering (SE) Fall 2025

Section 010 Tuesday and Thursday 9:15 - 10:30 am (CAS) 134

Instructor: Dr. Michael L. Collard
Homepage: mlcollard.net
Email: collard@uakron.edu
Office: Arts & Sciences (CAS) 228
Mailbox: Arts & Sciences (CAS) 221
Phone: (330) 972-7191
Office Hours: Available on the instructor's homepage. Other times are by appointment.

Course Description A comprehensive overview of all phases of software development, including requirements, analysis, design, implementation, testing and validation, release, maintenance, and evolution, focusing on agile methodologies.

Learning Objectives Students who complete the course can:

- Fully explain and contrast agile and waterfall process models.
- Demonstrate the ability to perform standard software development procedures such as project planning, issue tracking, version control, etc., as part of a team.
- Create a project plan that includes requirements documents, such as user stories.
- Discuss the role of analysis, design, and implementation in the software development process.
- Create and perform software validation and testing.
- Evaluate software evolution's role in the software development process, including refactoring and concept location.

Assessment The course includes an assessment for the *Department of Computer Science Degree Program Assessment Plan* Learning Outcome 5: "An ability to function effectively on teams to accomplish a common goal" for the BS CS Systems Track and BS CS Management Track. Assessment data is reported anonymously to the Department of Computer Science for students in these tracks. Assessment scores are determined separately and are not a part of the grade in the course.

Prerequisites: Minimum C- in CPSC 210 Computer Science II **Credits:** 3

Textbooks
Pilone, Miles, *Head First Software Development*, O'Reilly, 2007 ISBN 978-0-596-52735-8

Rajlich, Václav, *Software Engineering: The Current Practice*, CRC Press, 2011 ISBN 9781439841228

Grading

Exercises	10%
Projects	40%
Midterm	25%
Final	25%
	100%

A	≥ 93%	C	≥ 73%
A-	≥ 90%	C-	≥ 70%
B+	≥ 87%	D+	≥ 67%
B	≥ 83%	D	≥ 63%
B-	≥ 80%	D-	≥ 60%
C+	≥ 77%	F	

Exercises Exercises occur frequently and are 10% of the overall score. Attendance is necessary to receive credit if the exercise is performed during class or covers material from that class period.

Projects At least 4 projects are assigned and collectively are 40% of the overall score. They include creating artifacts of the software-engineering process and performing software-engineering tasks, including corrective and adaptive maintenance. Project grades include correctness, readability, design style, quality of design, and application of concepts presented in the course. Some projects include controlled collaborative work with other students.

Midterm The Midterm Exam is 25% of the overall score. It occurs after the 8th week of the semester, with the specific date announced at least one week before.

Final Exam The Final Exam is in the regular classroom on Tuesday, Dec 9, 12:15 - 2:15 pm and is worth 25% of your overall score.

Policies The course involves collaborative team activities, conducted during class, that count towards exercises and projects. Full credit requires attendance.

Class instruction uses various forms of presentation, including instructor notes, interactive web pages, and writing on the board. The instructor may enter examples and discuss them during class. Attendance is necessary for a complete understanding of the material.

Any source code created for this course must be committed to a GitHub Classroom Git repository. For credit, the code must appear in the proper branch and repository.

Late assignments require a valid excuse so that work can be graded and returned promptly. It is up to the student to make up any missed material. Make-ups of any work for this class are given only with an excused absence or a documented, valid emergency. I encourage you to contact me if an emergency arises.

Only students whose names are on the University's official 15-day class list can attend class. Consult University information for specific dates and policies regarding course withdrawal.

Academic Honesty All submitted work (exercises, projects, and tests) must be your own. Submission of work that is even partly not yours results in a report to the *Office of Student Conduct and Community Standards*.

AI Policy AI tools (such as ChatGPT) are powerful tools that can be used to aid in the learning process. Students should look to their instructors for guidance on the fair and ethical use of AI tools for this course. The inappropriate or unethical use of such technologies will violate the Code of Student Conduct as cheating, plagiarism, fabrication, unauthorized collaboration, misrepresentation, and/or gaining an unfair advantage. The Code of Student Conduct is a University rule that provides the framework for the student conduct process at the University of Akron and defines student misconduct and the process that the University will use to address student misconduct reported to the Department of Student Conduct and Community Standards. Students at the University of Akron are responsible to know and abide by the Code of Student Conduct and all University rules, regulations, and policies.

In this course, students are welcome to use whatever AI tools might help them, however they like, as much as they want. Students must know and abide by The University of Akron Code of Student Conduct.

The use of AI tools in software development is one of the first impactful utilization of this technology. However, these tools' output may often be incomplete, lack the necessary quality, or even fail in some instances. For instance, the code generated may not compile or may use non-existent features. It is the student's responsibility to compile and meticulously test the resulting code. This course emphasizes the process of software development rather than the actual act of writing the code.

Classroom Environment & Respect This class, as well as The University of Akron community, prohibits unlawful discrimination and harassment—including sexual harassment—on the basis of race, color, religion, sex/gender, sexual orientation, gender identity or expression, age, national origin, ethnicity, disability, pregnancy, parental or foster parent status, nursing status, military status, genetic information, or veteran status. Protected-class–based harassment is not tolerated and is investigated under university policy. More details can be found at the EEO/AA Office.

Special Notice Any student who feels she/he may need an accommodation based on the impact of a disability should contact the Office of Accessibility at 330-972-7928. The office is at 105 Simmons Hall.

The University of Akron is committed to providing an environment free of all forms of discrimination, including sexual violence and sexual harassment. This includes instances of attempted and/or completed sexual assault, domestic and dating violence, gender-based stalking, and sexual harassment. Additional information, resources, support and the University of Akron protocols for responding to sexual violence are available at uakron.edu/Title-IX.