



School of Computer Science and Information Systems
44-692-04 Graduate Directed Project-II (3 hours)
Spring 2026

Instructor: Dr. Mark Chai		Email: schai@nwmissouri.edu	Office: CH2315
Office Hours:	Monday, Friday	1:00 pm - 2:00 pm	CH2315
	Thursday	3:30 pm - 5:00 pm	CH2315
	or by appointment	Phone: (660) 562-1600	

Prerequisites: CSIS 44691 with a grade of C or better

Textbook and supplementary materials:

No textbook is required. Students are expected to use the library and research topics as necessary.

Software: The software students will need access to will vary based on the project requirements. Students may use any software the university has a license to (that covers GDP I) and any free/open source software.

Course description: Software development practicum designed to integrate computer-related skills into an intensive project environment. Students enroll in this course for two consecutive semesters, for a total of six credit hours.

Course Objectives:

Learning Outcomes:

1. An ability to communicate effectively with a range of audiences about technical information.	Grades on workshops, client meetings, stand-up meetings, mid-term and final presentations.
2. An ability to apply principles and concepts with technologies to design and develop computer based solutions.	Grades on client meetings, team meetings, and weekly progress.
3. An ability to analyze a problem, and to identify and define the computing requirements appropriate to its solution.	Grades on workshops, mid-term presentations, final presentations, weekly progress, client meetings, documentation and all other project artifacts.
4. An ability to design, implement, and evaluate a computer-based solution to meet a given set of computing requirements in the context of the discipline.	Scores on class participation, final presentation, workshops, project artifacts.
5. An ability to apply models, tools, and techniques to implement computer-based applications aligned with industry standards.	Team and individual scores on final project presentation, workshops, team meetings, client meetings, stand-up meetings and class participation.

6. An ability to make informed judgments in computing practice based on legal and ethical, and social principles.	Team and individual scores on project presentation, client meetings, attendance, punctuality and academic integrity.
7. An ability to: a. utilizes inclusive language and behaviors, b. implement applications accommodating a wide range of individuals including diversity in ethnic/cultural background, or physical ability, and c. function as an effective member of a diverse team.	Grades on workshops, client meetings, stand-up meetings, mid-term, weekly progress, project artifacts, and final presentations.
8. An ability to function effectively on teams to establish goals, plan tasks, meet deadlines, manage risk, and produce deliverables.	Grades on workshops, client meetings, stand-up meetings, mid-term, weekly progress, project artifacts, and final presentations.
9. An ability to evaluate and demonstrate leadership skills, make sound data-driven decisions, take responsibility for actions, manage workload, address challenges ethically and responsibly, and communicate effectively on technical matters to a wide variety of audiences.	Grades on workshops, client meetings, stand-up meetings, mid-term, weekly progress, project artifacts, and final presentations.

Additionally, upon completion of this course, students will

1. Gain experience working on a “real world” project by following software development lifecycle (SDLC)
2. Use software development tools and techniques including, but not limited to:
 - Source code repositories
 - Standard documentation techniques
 - Deployment and release management
 - Iteration planning
 - Issue tracking
 - Testing tools
 - Maintenance issues
 - Use of industry standards
3. Install the necessary software required to develop the project
4. Implement and test the project based on the client requirements
5. Use agile methodologies to plan and monitor projects
 - the core practices of agile methodologies
 - the importance of value-driven delivery and continuous customer and user feedback
 - the implementation of Scrum
6. Improve soft skills including, but not limited to:
 - Written and verbal communication skills
 - Teamwork and collaboration
 - Conflict resolution
 - Adaptable to software technologies
 - Evaluate new software technologies and implement appropriate choices

Grading Criteria:

Components	Percentage
Client Meetings	10%
Daily/Weekly Progress	10%
Midterm Presentation	10%
Final project presentation	15%
Workshop(s)	10%
Project artifacts	40%
Miscellaneous	5%
Total	100%

The primary factor in determining your grade is the quality of your work. Other factors will, however, negatively influence your grade, including but not limited to:

- failure to submit required artifacts/assignments on time, unless granted an extension - result: dependent upon artifact, but typically a grade of 0 will be awarded for that artifact.
- failure to be on time or physically present for all required meetings, including class attendance and project group meetings
- failure to fully complete tasks assigned by the faculty mentor, such as milestones, presentations, design, and coding - result: dependent upon quality of work completed.
- failure to behave in a professional manner
- failure to attend all classes – result described in the section labelled Attendance.

The grade components will included graded elements that may include (but are not limited to):

- Client Meetings
 - Client feedback on individual professionalism
- Daily/Weekly Progress
 - Individual contribution to completion of project artifacts throughout the semester
- Presentations and Workshops
 - Midterm presentation
 - Content workshops
- Final Presentation
 - Presentation of design and prototype
- Project artifacts
 - Requirements documentation (with glossary, use cases, etc)
 - Project charter
 - Sample/seed test data
 - UI prototype
 - Architecture prototypes
 - Security documentation and concerns
 - Risk analysis and development prioritization
 - Project specific artifacts
 - Repository that contains all project artifacts
 - Client and mentor satisfaction form signed.
- Miscellaneous
 - Quizzes
 - In class activities

During non-summer semesters, You are expected to work at least 15 hours a week on the project individually. All students are required to contribute to the creation of project artefacts and

implementation. Over the summer semester, this increases to a minimum of 30 hours work outside class meeting times.

Minimal project implementation, as described by the user requirements will not usually result in a grade of A.

Minimal implementation of a complex project may be an exception to this rule.

Your individual or team score on each component will be posted in the online gradebook as soon as that component has been graded. You are responsible for checking the gradebook at least once a week to ensure that your grades are properly posted. ***If there is an error in grading, you must bring it to the attention of the class assistant or instructor within two weeks of the time the grade is posted.***

Grading scale: The grading scale is the standard 10 point grading scale, but may be revised in the students' favor at the instructor's discretion. The faculty reserves the right to make adjustments to the following percentage.

90%-100%	A
80%-89.9%	B
70%-79.9%	C
60%-69.9%	D
<60%	F

Attendance policy:

Attendance in this course is mandatory. Some in-class exercises may have points associated with them and may not be announced in advance. A student who misses such an exercise due to an unexcused absence will not be allowed to make it up and will receive a zero. Excused absences include attendance at a university sponsored event (documented with an excuse signed by the university sponsor prior to the event) or by circumstances considered adequately extenuating by the course instructor. It is the responsibility of the student to promptly notify his or her instructor when unable to attend class.

The following excused absences are acceptable only:

1. Attendance at a university-sponsored event (Official documentation with an excuse signed by the university sponsor prior to the event).
2. Emergency health reason (Official local medical documentation with a valid reason statement and Official local doctor's notes).
3. Immediate family emergency case by circumstances considered adequately extenuating by the course instructor (Official documentation with a valid reason statement and proof).

Please refer to the university policy on attendance at

<https://www.nwmissouri.edu/policies/academics/Attendance.pdf>

Exam policies:

Dates for all exams will appear on the course website under the weekly modules. If you must miss an exam, it is your responsibility to notify the instructor prior to the exam.

Make-ups for written exams will be given only for valid and verifiable reasons. Valid reasons include emergency health reason, immediate family emergencies, and university-sponsored trips (same as Attendance policy). Written documentation with suitable verification must be supplied before a make-up will be allowed.

All exams are closed book, closed notes, unless explicitly noted in writing by the instructor.

No calculators, cell phones, or other electronic devices can be used during exams or quizzes unless explicitly allowed by the instructor.

Assignment Due Dates:

Each assigned, graded activity will have a due date posted. Any submission up to 24 hours after the due date will be considered as a late submission. The score for late submissions will have 10% of the maximum score deducted from the actual points. The assignments submitted via email or hard copy will not be graded.

Cheating: Academic dishonesty will not be tolerated in this class. Any form of cheating will be dealt with according to the Academic Honesty Policy provided in the Northwest Missouri State University's Planner/Handbook, and may result in significant penalties, including receiving an F or zero grade for an assignment or exam, an F-grade in the course, and even removal from the program or suspension/dismissal from the University. Do your own work.

Personal Equipment and Software: You will be required to use a computer to complete the assignments or exams for this course. Essential requirements are a modern operating system (Windows, Mac, or Linux) that meets the assignments and exam requirements. It is the student's responsibility to make his/her computer system meet the requirements of the assignments or exam.

As a computer science graduate student you must develop the ability to troubleshoot common software configuration issues using a search engine, online tutorials, web forums, and other common tools.

Course Communication: Vital course materials, such as instructions, announcements, and assignments, will be available on the course website and your Northwest Missouri State University email account. It is your responsibility to check each of these sources daily.

Professionalism and email: Students are expected to behave in a professional manner in their dealings with each other, the class assistant, and the instructor. Emails should be politely written, use proper grammar, and follow the rules of capitalization.

Emails must include the course number (44-692) and section number (03) in the subject line. For example: '[44692-03] Query about Assignment 2'. For security reasons, emails that do not include an appropriate entry for the subject will be ignored. Emailed queries on material found in the Canvas course areas will NOT be answered.

Artificial Intelligence Engines: Generative AI engines, such as ChatGPT, are fast becoming important tools to help improve various personal, professional, and educational tasks. Specifically for this course, the submission of academic work created by a generative AI engine is **not allowed**. All submitted course work must be your own work. The goal is for you to learn and understand the course content. AI engines are a tool which can help facilitate the learning process. The understanding of course content is assessed by completing the required course work. Your understanding cannot be gauged if AI generated material is used.

Disclaimer: Course schedule is subject to change and you will be responsible for abiding by any such changes.

Your instructor will notify you of any changes.