SENG 4500: Software Engineering Capstone Project I
Fall 2024

Instructor	Mr. Aleksei Vilkomir
Scheduled Class Time	Monday and Wednesday, 3:30pm to 4:45pm Class meets in Bate 3007
Instructor Office	Science & Technology Building, C-111
Office Hours	Monday, Wednesday 11:00 am – 11:45 am, 2:00 pm – 3:15 pm, 4:45 pm – 5:30 pm Friday 11:00 am – 11:45 am Feel free to make an appointment with me if you need to meet outside of these hours.
Instructor Phone	252-328-9439
Instructor Email	vilkomira21@ecu.edu, responses within 24 hours during the week, potentially longer during holidays or weekends
Course Web Page	https://ecu.instructure.com/
Required Textbooks	None

Course Description and Objectives

This is the first course in a two-course, senior-level capstone project experience. This course provides practical training in software development using software engineering tools and principles. Students will practice using software development processes, methodologies, and commonly used tools covering the complete life cycle of software development by building a fairly complex software system. Students are required to complete a significant team project during the semester. Students work as part of a team to develop solutions to problems posed by either internal or external customers. Problems may require considerable software development or evolution and maintenance of existing software products.

Upon completion of this course, each student will be able to:
- Analyze problem statements and customer feedback to determine requirements.
- Analyze proposed architecture and design for conformance to requirements.
- Design a system to meet the requirements using architectural and design principles from previous courses.
- Create a plan of work with appropriate milestones and team member responsibilities to deliver the product in the time available
- Document software systems

The following applications may be used in this course:

- UML Modeling: StarUML, Visual Paradigm
- Project and Task Management: Atlassian Jira, Atlassian Confluence
- Version Control/Configuration Management: Git and GitLab
- Development Environment: JetBrains IntelliJ or other language-specific IDEs

Topics

This course has no predefined topics to be covered by its very nature. Faculty serve as a coach and provide specific technical and process information as requested by each team for the particular circumstances faced on their project.

Grading

Each group will be approximately four students. More details about the project are available on Canvas. The group project is worth 90% of the course grade. The breakdown of this 90% is as follows:

Task	Percent
Project Management	20%
Requirements Elicitation, Analysis, and Specification	20%
Design and Architecture	20%
Project Presentations	20%
Peer Feedback	10%

The other 10% of the course grade is based on attendance and participation.

Course grades will be assigned based on the following grading scale:

Grading	
A	≥ 94
A-	90-93
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	below 60

The final team project presentations are scheduled during the last exam period, and this is 2:00 - 4:30 p.m. on Thursday, December 11. There is no actual final exam in this class, but attendance is mandatory during the final exam period.

Attendance Policy

Attendance is required for this course: you **must** attend regular classes. Not counting excused absences, you can miss at most three regular class sessions on days when you are not presenting before you start losing points**. Each class missed beyond the first three will result in a deduction of 3 points from your final course grade (e.g., if you have five absences that are not excused, you will lose 6 points from your final grade)**. You cannot miss a class session on a day when you are scheduled to present (i.e., when you are one of the speakers for your team) without a university-excused absence. **Ten** unexcused absences will automatically give you **an F for this class**.

Excused absences fall into two categories: university-excused absences and planned absences that have been approved.

A university-excused absence is defined here: https://www.ecu.edu/cs-studentaffairs/dos/excused_absences.cfm. If your absence is planned (e.g., participation in university-related activities, religious observations), you should work with your team to ensure you are not scheduled to present on the same day and that your work on the project is up to date. You should also contact your teammates and me to ensure I am/they are aware of it, even when not presenting. I can also brief you on what we worked on in class that day. If you have an emergency where you cannot contact me and/or your teammates (e.g., a sudden illness), you should follow up once you are better as quickly as possible to see what you missed. Ensure you get a doctor's note if you miss class for medical reasons.

An excused absence is a bit broader: it includes university-excused absences and adds planned absences you discussed with me. This includes absences for job interviews, attending conferences related to your studies, and family emergencies. It would help if you endeavored to minimize conflicts with class, but I know this isn't always possible. If you have already discussed an absence with me in advance, and I've approved it, you can assume you have my permission, but feel free to ask if you are unsure. Similarly to the above, keep your team in the loop.

As is to be expected, if you are sick, do not come to class! This is an excused absence. Just contact me as soon as you are able.

You are responsible for announcements and assignments are given in class. If you miss a class, it is up to you to obtain notes and any other information provided in the class. Excuses that you did not know about something because you did not come to class and did not obtain the information will not be accepted. If you are having trouble keeping up with the work in this course, come during office hours or ask for help right away. If you wait until the end of class to seek help, there is very little that you can do to improve your score.

Late To Class / Leaving Early

If you miss more than 20 minutes of the class period (arriving late/leaving early), you will be counted as absent for the entire class period.

ECU Connect

This course uses the ECU Connect system to provide you with information on your performance within the course. For more information, please see https://academic-success.ecu.edu/ecuconnect/students/.

Late Assignment Policy

In general, late work is not accepted. Expectations and due dates are made very clear. If you encounter unexpected circumstances such as serious illness, family emergencies, or technical issues (e.g., computer malfunctions), it is your responsibility to contact me to request an extension during normal business hours (8 am – 6 pm on workdays) before the due date, not after. Proper documentation will be required.

Student Conduct

Smoking is not permitted in classrooms. Please turn off mobile phones in class. Laptops and tablets can be used for taking notes, but should not be used for other work (or recreational browsing, playing games, etc).

Students are expected to abide by the university's Student Honor Code. The homework that you do is a critical part of your education. Each student is expected to do his or her own individual work, and each group is expected to do their own group work. That does not mean you are not allowed to discuss your ideas with other students or groups. Working in groups can be beneficial, and I encourage you to talk through ideas with other students. But outright copying is considered plagiarism and is unacceptable. Students who copy other students' work, or who allow their work to be copied, or who copy their work from other sources, such as the Internet, will receive either no credit or negative credit for the assignment, and may be reported to the university for an academic integrity violation.

Other potential academic integrity violations are cheating, falsification, multiple submissions of the same work in different classes, and attempts at any of these violations. Please see https://osrr.ecu.edu/policies-procedures/ for more details.

Academic integrity violations can result in a grade penalty up to and including an F for the course.

Usage of AI and Machine Learning Tools

Students are allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2) on assignments in this course if instructor permission is obtained in advance. Unless given permission to use those tools, each student is expected to complete each assignment without substantive assistance from others, including automated tools.

If permission is granted to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2), they must be properly documented and credited. Students should seek out the appropriate source (e.g., MLA, APA, etc..) and cite in the most correct format according to the style guide. Note, online style guides are being updated continually to include new sources such as ChatGPT.

If a tool is used in an assignment, students must also include a brief (2-3 sentences) description of how they used the tool, in addition to citing the use of any tool used.

Incompletes

No incompletes will be issued in this course except for extraordinary circumstances, which generally will be situations where almost all work is complete, this work has been done at an acceptable level of quality, and it is realistic that you can pass the course once the remaining work is completed.

Copyright on Course Materials

Course materials, including programming assignments and lecture notes, can only be publicly shared or used for commercial purposes if given permission. This is covered by ECU copyright regulations, available at http://www.ecu.edu/prr/10/40/02, which state the following:

> 7.1.3. Notes of classroom and laboratory lectures, syllabi, exercises and other course materials taken by Students shall not be deemed Student Works, may only be used for personal educational purposes, and shall not be used for commercialization by the student generating such notes or by any third party without the express written permission of the author of such Works. Violation of University Policy may be grounds for disciplinary action pursuant with the ECU Student Conduct Process.

Weather Emergencies

In the event of a weather emergency, information about ECU can be obtained through the following sources:

| ECU emergency notices | http://www.ecu.edu/alert |
| ECU emergency information hotline | 252-328-0062 |

Students with Disabilities

East Carolina University seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must be registered with the Department for Disability Support Services located in Slay 138 ((252) 737-1016 (Voice/TTY)).

For more information, please see https://accessibility.ecu.edu/students/dss-guidelines/.

Caveats

Occasionally, it may be necessary to revise this syllabus due to extenuating circumstances. I reserve the right to revise this syllabus if the need arises. If I do so, I will announce this on Canvas.