# CSCI 3030: Software Engineering I
# Fall 2024

| Instructor | Mr. Alex Vilkomir |
|---|---|
| Scheduled Class Time | Section 001: Monday, Wednesday, and Friday, 09:00 am to 9:50 am<br>Class meets in Austin 302<br>Section 002: Monday, Wednesday, and Friday, 10:00 am to 10:50 am<br>Class meets in Austin 302<br>Section 003: Monday, Wednesday, and Friday, 1:00 pm to 1:50 pm<br>Class meets in Austin 202 |
| Instructor Office | Science & Technology Building, Room C-111 |
| Office Hours | Monday, Wednesday 11:00 am – 11:30 am, 2:00 pm – 3:15 pm<br>Friday 11:00 am – 11:30 am, 2:00 pm – 3:00 pm<br><br>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 on weekends or over holidays |
| Course Web Page | Canvas: https://ecu.instructure.com/ |

## Course Description and Objectives

This course provides practical and theoretical knowledge of software engineering. Students will learn the processes, methodologies, and tools used during the complete life cycle of professional software projects. Students are required to complete a team project over the course of the semester.

Upon completion of this course, each student will be able to:
- Understand the nature, objectives, and methods of software engineering practice
- Evaluate and choose process models for the development of software systems
- Use appropriate project scheduling and management techniques to create project management plans and documents
- Use appropriate requirements elicitation, analysis, and modeling techniques to establish and document software requirements
- Design software systems using object-oriented techniques and visual modeling tools
- Use appropriate software testing techniques to create test cases, perform tests, and create test documentation
- Use version control systems to manage software configurations and collaborate effectively on software development

The following applications may be used in this course:
- UML Requirements and Design Modeling: NoMagic MagicDraw, StarUML
- Project and Task Management: Jira, Confluence

- Version Control/Configuration Management: Git and GitHub or GitLab
- Development Environment: JetBrains IntelliJ or other language-specific IDEs
- Unit Testing: JUnit or other language-specific unit testing frameworks

## Topics

Topics covered in this course include:
- The nature of software and software engineering practice
- Software process models
- Software requirements elicitation, analysis, and documentation
- Software architecture and design, focusing on object-oriented design techniques
- Modeling with the Unified Modeling Language (UML)
- Software testing strategies and documentation
- Project management concepts, including team management, risk management, and project estimation
- Configuration management
- Software maintenance and evolution

## Grading

Students will be evaluated based on the combination of class activities. The final grade will be assessed with the following criteria:

| Assessment | | Grading |
|---|---|---|
| Midterm exam (20%) and final exam (20%) | 40% | A: $\geq 94$;   A-: $\geq 90$ |
| Hands-On Activities (including in-class activities), Discussions, Reading Quizzes, and Homework Assignments | 20% | B+: $\geq 87$;   B: $\geq 83$;   B-: $\geq 80$<br>C+: $\geq 77$;   C: $\geq 73$;   C-: $\geq 70$<br>D+: $\geq 67$;   D: $\geq 63$;   D-: $\geq 60$<br>F: $< 60$ |
| Group Project | 40% | |
| Total | 100% | |

## Required Course Materials

Our main text for the course will be ***Engineering Software Products: An Introduction to Modern Software Engineering,*** by Ian Sommerville, Pearson, 2020. You can rent or purchase the book outright, and you can select either physical or digital versions. This book is required.

We will also be reading a number of papers and other online materials during the course. Links to these will be provided on Canvas, with all material available electronically.

## Exams

The midterm exam for the course will be available during our regular class period on Friday, October 4, 2024. The final exam for the course Section 001 is 8 am to 10:30 am on Thursday, December 5th. Section 002 is 8 am to 10:30 pm on Wednesday, December 4th. Section 003 is 11 am to 1:30 pm on Wednesday, December 4th.

## Group Project

Each group will be made up of 3 to 5 students. All details about the project, including the breakdown of credit across different project assignments, will be available on Canvas.

## Attendance Policy

This is a face-to-face class, and attendance is expected. You can miss up to three classes without an excused absence. 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 5 absences that are not excused, you will lose 6 points from your final grade). This is done to emphasize the importance of attendance, especially since this gives you a chance to coordinate with your team.

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

A university-excused absence is defined here: https://deanofstudents.ecu.edu/home/university-excused-absence/. 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 me and your teammates to make sure 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. Make sure 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, but also adds planned absences you have discussed with me. This includes absences for job interviews, for attending conferences related to your studies, and for family emergencies. You should endeavor 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 not sure. Similarly to the above, keep your team in the loop.

**Important Note:** While I am committed to supporting you in balancing your academic, professional, and personal responsibilities, please do not abuse this policy. Excessive or frivolous requests for absences that are not genuinely necessary can disrupt your learning experience and that of your classmates. Abuse of this policy may result in stricter scrutiny of absence requests and potential academic penalties. Always strive to attend all classes and participate fully in team activities whenever possible.

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 given in class. If you miss a class, it is up to you to obtain notes and any other information that was 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 to office hours or ask for help right away. If you wait until the end of class to seek help, there is most likely 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 absent for the entire class period.

## 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. All students are expected to do their 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.

## Cell Phones Use

The use of cell phones in class is prohibited.

## Laptop Use

This class requires reliable access to a laptop for completing class assignments, home assignments, and communication. Webcams are an option for office-hour interactions but are not required. Please review the ECU Computer Recommendation.

Equipment—including computers, webcams, headsets, and hotspots—is available for checkout at both ECU libraries:
- Equipment Available for Checkout from the main campus library (link)
- Equipment Available for Checkout from Laupus Library (link)

## 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.

## 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.

## 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/.

## 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:

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| 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 modify this syllabus if the need arises. If I do so, I will announce this on Canvas.