

# CSCI 3030: Software Engineering I

## Fall 2021

<b>Instructor</b>	Dr. Mark Hills
<b>Scheduled Class Time</b>	Tuesday, Thursday: 12:30pm - 1:45pm Science & Technology Building, Room 346
<b>Instructor Office</b>	Science & Technology Building, Room C-110
<b>Online Office Hours</b>	Tuesday 2:00pm to 4:00pm Wednesday 10:00am to 11:00am Thursday 2:00pm to 4:00pm  Feel free to make an appointment with me if you need to meet outside of these hours.
<b>Instructor Phone</b>	252-328-9692
<b>Instructor Email</b>	<a href="mailto:hillsma@ecu.edu">hillsma@ecu.edu</a> , responses within 24 hours during the week, potentially longer on weekends or over holidays
<b>Course Web Page</b>	Canvas: <a href="https://ecu.instructure.com/">https://ecu.instructure.com/</a>

### 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

## Classroom Meetings

As stated in ECU's [Community Expectations](#), by working together, we can keep Pirate Nation safe for a successful Fall 2021 semester. Therefore, we will be observing the following class policies related to your health and safety:

- All students are required to comply with the [University Regulation on Face Coverings](#). No student will be allowed into the classroom without a face covering or mask worn properly over both the mouth and nose. You must wear a face covering properly the entire time you are in class.
- If you do not have access to a face covering, you may obtain a mask from Dowdy Student Store, Pirate Pantry, or another provider of masks.
- Maintain appropriate social distancing in hallways or common spaces prior to and after class, and stay spaced as much as possible in the classroom.
- Follow all posted signage related to entry, exit and pedestrian flow within classroom buildings.
- Conduct a daily health screening using the CDC's [COVID-19 symptoms](#) list. Do NOT attend class if you answer yes to any item on the list or if you are experiencing symptoms of any illness.

In the case of localized outbreaks affecting our classroom identified by health officials, we will transition to online delivery for up to two weeks for your safety. Health officials will closely monitor conditions and may need to contact you by phone to help them monitor public health conditions. Please ensure [your phone number is up to date in PiratePort](#). After this period of up to two weeks, we will resume on campus in-class activities. The temporary move to online course delivery will not affect the due dates for exams, quizzes, assignments, or any other form of assessment. If the course schedule requires adjustment, I will always notify you.

If the course moves online, you may be required to attend synchronous class meetings at the established class times via our existing Teams team for the course. Class meetings will be recorded for students who have poor internet connections.

I will post all course materials and class meeting recordings, if available, on Canvas. Students unable to attend should access those notes and materials and contact me if they have any questions. The Canvas course will be used for all communications, assignments, and assessments. It is recommended you save on your computer and/or print a copy of the syllabus, assignment schedule, and other important course material. In the event of a Canvas outage, I will use email to communicate with you.

**Official Statement on Course Recordings:** This class will be recorded and broadcast on the internet and/or distributed on other electronic media now or hereafter known. These recordings may contain your image and your voice. You must notify me as soon as possible if you DO NOT want your image and your voice contained on the recording. If you do not so timely notify me, then you understand and authorize that as part of this class we may record your image and record your voice and broadcast it on the internet and/or distribute it on other electronic media now or hereafter known.

**Instructor's Explanation/Addendum:** The language above is language we have been asked to use. Essentially, if we record the course, you may be on video. Most likely, this would only include audio of your voice, since we would mainly be focused on recording the lecture itself, not the entire classroom, but if we have a discussion or you ask a question, the audio from this may be captured. The video will only be available to other members of the course.

## **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. Please see Canvas for links to purchase the textbook. 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.

For this course, you will need a university-approved Face Covering/Mask, Hand Sanitizer, and Disinfectant wipes. Please see <https://returnofpiratenation.ecu.edu/protecting-our-pirates/> for more details.

In this course, you will have online activities including quizzes, online discussions, and assignment submissions outside of class in Canvas (<https://canvas.ecu.edu>). This class requires reliable access to a computer and a microphone for recording presentations and providing peer review feedback. Webcams are an option for office hour interactions if attending remotely, 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 \(link\)](#)

## 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-: $\geq 80$ C+: $\geq 77$ ; C: $\geq 73$ ; C-: $\geq 70$ D+: $\geq 67$ ; D: $\geq 63$ ; D-: $\geq 60$ F: $< 60$
Group Project	40%	
Total	100%	

## Exams

The midterm exam for the course will be available during our regular class period on Tuesday, October 5, 2021. The final exam for the course will be available during our regular class period on Thursday, December 2, 2021. More details about the exams will be available closer to the exam dates. Both are timed exams. Note: you will not need a proctor for the exams in this course. All exams will be administered through Canvas.

## 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, are 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://www.ecu.edu/cs-studentaffairs/dos/excused\\_absences.cfm](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 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.

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. Since we are recording as much of the class as possible, you can continue to follow along online, or catch up when you are better.

In case of an outbreak, the class may be moved to an online format for up to two weeks. During this period, the above attendance policy will remain in effect. You instead will be expected to attend online, during our regular class time. If you have poor Internet access, contact me within 48 hours of the announcement of the online move to work out a plan for attendance. You will also want to coordinate with your teams in that case.

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.

## **Starfish**

This course uses the Starfish system to provide you with information on your performance within the course. For more information, please see <http://www.ecu.edu/cs-acad/advising/upload/Starfish-Student-Getting-Started.pdf>.

## **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 [http://www.ecu.edu/cs-studentlife/policyhub/academic\\_integrity.cfm](http://www.ecu.edu/cs-studentlife/policyhub/academic_integrity.cfm) for more details.

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

## **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.

## **Continuity of Instruction**

Making up missed instructional time in this course will follow [ECU's Policy for Making Up Missed Instructional Time Due to Suspension of Instruction](#).

In the event of a campus emergency that disrupts academic activities, course requirements, deadlines, and grading percentages are subject to change. Information about changes in the course will be communicated as soon as possible by email, and on Canvas. Students are encouraged to continue the readings and other assignments as outlined in this syllabus or subsequent syllabi.

## **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	<a href="http://www.ecu.edu/alert">http://www.ecu.edu/alert</a>
ECU emergency information hotline	252-328-0062

## **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 Blackboard.