

# CSCI 3030: Software Engineering I

## Spring 2020

<b>Instructors</b>	Mr. James Philips, Dr. Mark Hills
<b>Scheduled Class Time</b>	Tuesday, Thursday: 3:30pm - 4:45pm Class meets in Austin 302
<b>Instructor Office</b>	Science & Technology Building, Room 234
<b>Office Hours</b>	Monday 3:30pm to 4:45pm Tuesday 2:00pm to 3pm Thursday 2:00pm to 3pm  Feel free to make an appointment with me if you need to meet outside of these hours. If I am not able to hold office hours at a regularly scheduled time, I will announce this on Blackboard.
<b>Instructor Email</b>	<a href="mailto:philipsj16@students.ecu.edu">philipsj16@students.ecu.edu</a> Responses within 24 hours during the week; potentially longer on weekends or over holidays
<b>Course Web Page</b>	Blackboard: <a href="https://blackboard.ecu.edu">https://blackboard.ecu.edu</a>
<b>Required Textbooks</b>	<i>Engineering Software Products: An Introduction to Modern Software Engineering</i> , by Ian Sommerville, Pearson, 2020  The electronic version of this book is available for roughly \$35 for a six month rental, which will be sufficient for this course. This book is not used in Software Engineering II (CSCI 4230). Please see Blackboard for additional information on the textbook.

### 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 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
- 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), 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-: $\geq 60$
Group Project	40%	F: $< 60$
Total	100%	

## Exams

Exams are closed book and closed notes, with the exception of an individual note sheet, an 8 ½ x 11 (letter size) sheet of paper, that can include hand-written notes on both sides. This sheet cannot be shared and must be handed in with each exam. The midterm exam is scheduled during the class meeting time on the Tuesday before Spring break (March 3). The final exam is scheduled during the class meeting time on the last regular day of class (April 23). Both the midterm and final exams are 75 minute exams. The final project presentations will be held during the final exam period. This is Thursday, May 7<sup>th</sup>, from 2pm to 4:30pm. This will be held in our regular classroom.

## Group Project

Each group will be approximately 4-5 students. More details about the project are available on Blackboard. The breakdown in credit for the project is as follows:

Task	Percent
Project Management	10%
Configuration Management	10%
Requirements Elicitation, Analysis, and Specification	10%
Architecture and Design	10%
Implementation	20%
Testing	10%
Final Project Report	10%
Project Presentation	10%
Peer Feedback, Peer Evaluation of Teamwork	10%

A spreadsheet, showing how points are allocated for work on the project, is available on Blackboard. This spreadsheet includes minimum thresholds to earn credit for each part of the project. If these are not met, it is possible to earn no credit for that part of the project.

## Attendance Policy

Attendance is required for this course. 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).** 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. You should also contact me and your teammates to make sure I am/they are aware of it, even when not presenting. 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, you can assume you have my permission, but feel free to ask if you are not sure. As with university-excused absences, keep your team in the loop.

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 <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.

### **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.

## Retention Requirements

Academic requirements for retention have changed. Please be aware of the following new GPA requirements. Please discuss the retention requirements, entrance to major requirements, and your goals with your academic advisor.

GPA Hours at ECU (identified in Transcript in Banner Self Service) <b>plus</b> transferred credit hours	“Old” Retention Requirement All courses taken at ECU	New Retention Requirements Effective with Fall 2011 grades All courses taken at ECU
1-29 semester hours	1.6 GPA	1.8
30-59 semester hours	1.8 GPA	1.9
60-74 semester hours	1.9 GPA	2.0
75 or more semester hours	2.0 GPA	2.0

## 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/pr/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 <http://www.ecu.edu/cs-studentlife/dss/>.

## **Writing Intensive (WI)**

CSCI 3030 is a writing intensive course in the Writing Across the Curriculum Program at East Carolina University. This course will focus on the development of writing skills. Upon completion of the course students will:

1. Use writing to investigate complex, relevant topics and address significant questions through engagement with and effective use of credible sources.
2. Produce writing that reflects an awareness of context, purpose, and audience, particularly within the written genres (Including genres that integrate writing with visuals, audio or other multimodal components) of their major disciplines and/or career fields.
3. Demonstrate that they understand writing as a process that can be made more effective through drafting revision.
4. Proofread and edit their own writing, avoiding grammatical and mechanical errors.
5. Assess and explain the major choices that they make in their writing.

This course contributes to the twelve-hour WI requirement for students at ECU. Additional information is available at the following site: <http://www.ecu.edu/writing/wac/>.

### **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.