

CSCI 3030: Software Engineering I

Fall 2018

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| Instructor | Dr. Mark Hills |
| Scheduled Class Time | Section 001: Tuesday, Thursday: 9:30am - 10:45am, Austin 306 Section 002: Tuesday, Thursday: 3:30pm – 4:45pm, Rawl 204 |
| Instructor Office | Science & Technology Building, Room C-110 |
| Office Hours | Tuesday 2pm to 3pm Wednesday 1pm to 4pm Thursday 2pm to 3pm Feel free to make an appointment with me if you need to meet outside of these hours. |
| Instructor Phone | 252-328-9692 |
| Instructor Email | hillsma@ecu.edu (response within 24 hours during the week, longer on weekends) |
| Course Web Page | Blackboard: https://blackboard.ecu.edu |
| Required Textbooks | <i>Software Engineering: Modern Approaches (2nd Edition)</i> , by Eric J. Braude and Michael E. Bernstein, Waveland Press, 2011 ISBN-10: 1-4786-3230-5 |

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 chose 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

- Project and Task Management: GitHub Projects
- Version Control/Configuration Management: Git and GitHub
- 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: ≥ 94; | A-: ≥ 90 | |
| Hands-On Activities/Homework Assignments | 20% | B+: ≥ 87; | B: ≥ 83; | B-: ≥ 80 |
| Group Project (Project and process management, Requirements, Design, Implementation, Test, Documentation and Presentation) | 40% | C+: ≥ 77; | C: ≥ 73; | C-: ≥ 70 |
| | | D+: ≥ 67; | D: ≥ 63; | D-: ≥ 60 |
| | | 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 Fall break (October 2). The final exam is scheduled during the class meeting time on the last regular day of class (November 29). Both the midterm and final exams are 75 minute exams. The final project presentations will be held during the final exam period, with November 27 used as an “overflow” for presentations in the larger section. Final exam periods for this class are, for the morning section, Wednesday, December 5th from 8am to 10:30am and, for the afternoon section, Thursday, December 6th from 2pm to 4:30pm.

Group Project: Each group will be approximately 5 students. More details about the project are available on Blackboard. The project tasks, including points out of the 40 “points” for the project, include:

1. Select and follow a software process model to develop the project. (3 points)

2. Develop a project schedule and project management plan, monitor project progress. (3 points)
3. Document potential risks and develop a risk management plan. (3 points)
4. Define system requirements including functional requirements and non-functional requirements. (5 points)
5. Define system design models using UML. (5 points)
6. Implement the system. (10 points)
7. Develop test suites for unit test and system test, and document test results. (5 points)
8. Document and present the project. (6 points)

Attendance Policy

You are expected to attend class. You are responsible for announcements and assignments given in class and posted on Blackboard. 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, did not see an announcement on Blackboard, and/or did not obtain the information from someone else will not be accepted. If you are having trouble understanding the lectures, come to office hours or ask for help. Get help as early as possible. 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 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) plus 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 |

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 provide you with advance notice.