Syllabus-S23

Sunday, December 19, 2021 3:14 PM

CS/SE/CE 3354.007 - Software Engineering
Tuesdays & Thursdays 4-5:15pm in SLC 2.303
Websites: elearning.utdallas.edu (assignment submissions, grades, etc.)
utdallas.box.com/v/cs3354-spr23

Instructor	Dr. Jey Veerasamy *Online Office hours* (MS Teams utd.link/jey): Mon & Wed 1-3pm OR by appointment *Communication:* MS Teams chat (preferred) or email jeyv@utdallas.edu
TA	TBD

Catalog Description:
(3 semester credit hours) Introduction to software life cycle models. Software requirements engineering, formal specification and validation. Techniques for software design and testing. Cost estimation models. Issues in software quality assurance and software maintenance.

Prerequisite: CS/CE 2336 or CS 2337 with a grade of C or better and CS/CE 2305 with a grade of C or better or equivalent. Prerequisite or Corequisite: ECS 3390.

Course Learning Outcomes:
After successful completion of this course, the students are expected to gain these:
• The ability to understand software lifecycle development models
• The ability to understand and apply software requirements engineering techniques
• The ability to understand and apply software design principles
• The ability to understand and apply software testing techniques
• The ability to understand the use of metrics in software engineering
• The ability to understand formal methods in software development
• The ability to establish and participate in an ethical software development team
• The ability to use software project management tools and techniques
• The ability to use CASE tools for software development

Textbook

IEEE Software Engineering Body of Knowledge (SWEBOK v3), 2014 (available in eLearning)

Suggested Course Materials

- D.C. Kung, Object-Oriented Software Engineering: An Agile Unified Methodology, 2014.
- C. Larman, Applying UML and Patterns, Third Edition, 2005.
- R.C. Martin, Agile Software Development: Principles, Patterns, and Practices, 2002;
- Clean Architecture, 2017; and Clean Code, 2008.
- S.R. Schach, Object-Oriented and Classical Software Engineering, Eighth Edition, 2011.
- M. Seidl, M. Scholz, C. Huemer, and G. Kappel, UML @ Classroom: An
- Introduction to Object-Oriented Modeling, 2015
- I. Sommerville, Software Engineering, Tenth Edition, 2016

Sequence of Topics

1. Modern software engineering
2. Software requirements
3. Software life cycles
4. Software project management
5. Peer reviews
6. Tools
7. **Test 1 @ Classroom (March 9)**
8. Requirements analysis
9. Formal methods
10. Software design
11. Measurement
12. Software testing
13. People, teams, and ethics
14. **Test 2 @ Classroom (May 4)**

Grading Policy

Course credit is only given for work assigned in the course schedule. No extra work will be assigned nor will extra credit be given for any

extra work performed by a student. Don't ask for a bump in the final grade - it should be earned, not just given!

Tests	30%	There will be 2 tests (Test1: 15% & Test2: 15%) You need to take each test during the class timings in the classroom using Lockdown browser. Each test will contain a few multiple choice questions & fill-in-the-blank questions. There will be a few bonus questions to reduce your stress ☺ Any make-up tests will be arranged and scheduled during the same week at the discretion of the instructor. There should be a valid reason (like Dr note, official off-site event participation, etc.) for scheduling make-up tests & you need to coordinate with the instructor in advance. Makeup test due to other scenarios will result in 20% penalty. Also, make-up test questions will be different, so the complexity may vary a bit. Best way to prepare for the test will be to attend each class & be engaged, complete the activities and weekly assignments & get your doubts clarified in timely manner. No extra preparation is needed for the tests!
Group Project	25%	All students will be working in a group of max 5 students each, throughout the semester. While it is tempting to work with your friends in the class, I encourage you to work with new folks! Each group will come up with a project to work on, work through the detailed requirements / user stories, then architecture, test plan & test cases, then implement as much as possible! Each group will be required to submit the work in multiple phases, then will do a short project presentation when the semester ends. More details on the group project phases will be provided in the second or third week of the course. I expect this to be the first group project for most students - I hope all of you will contribute & work well together, enjoy the process & get the max out of the experience! This group project will help you succeed in CS 4485 project course and also when you go for Internship & Full-time job, since you will likely be working in a small group of software engineers. Each team should maintain a Google document with meeting minutes every week. Also, there will be a peer review towards the end. Both will translate into a part of group project grade.
Assignments	25%	There will be an assignment almost every week, due on Thursday. Late submissions will be accepted with 10% penalty until Sunday night. All assignments will contribute equally towards the weighted total, which in turn determines the final grade. Complexity level of each assignment will vary – each assignment may take several hours to complete. You are expected to start working on them as soon as they are posted so that you have "enough" time to work through the glitches, get the necessary help & still manage to submit on time. If you cannot complete an assignment due to medical condition, send the Doctor note to the professor using MS Teams chat. You will be given a few additional days to complete the assignment. We are all here to learn! Do NOT copy from others or use online resources to complete the assignments. Suspicious cases for plagiarism will be referred to UTD administration directly - Review http://utdallas.edu/conduct/integrity & http://utdallas.edu/conduct/manage-dishonesty for details.
Activities	20%	There will be 1 or 2 activities every week to ensure that you are keeping up with the class content (complete tutorials at home, finish simple exercise or attend guest lectures / review recordings) You also need to complete an in-class activity in every class - bring your laptop to every class - all of them will contribute equally & together they will account for 20% of your final grade. Activities ensure that you are keeping up with the course - they cannot be made up after the deadline! In other words, late submissions will NOT be accepted, however 2 lowest scores will be dropped when computing the final grade, to cover the common issues like car-trouble, overslept, etc. You should be able to earn full points if you attend all the sessions. If you cannot complete an activity due to medical condition, send the Doctor note to the professor using MS Teams chat. You will be given additional time to complete OR exempted from that activity.

Here is the standard mapping used for mapping the weighted total to letter grades in UTD. You have to earn the grade with your work. I do not plan to round up to improve your final grade.

A+ >= 97	97 > A >= 94	94 > A- >= 90
90 > B+ >= 87	87 > B >= 84	84 > B- >= 80
80 > C+ >= 77	77 > C >= 74	74 > C- >= 70
70 > D+ >= 67	67 > D >= 64	64 > D- >= 60
60 > F		

Weighted total in your gradebook shows the current weighted grade based on your graded work. For example, if you have done only 2

assignments & 2 weeks of Class work so far, current grade will be based on only those entries. So, it will continue to change throughout the semester as the items are graded.

Course & Instructor Policies

You need to bring your laptop to each class. We will work on a series of coding problems in each session. I expect you to be physically and mentally present in the class. You are NOT allowed to do anything in the laptop/phone unrelated to the class work.

In addition to meeting the instructor before or after the class, you can also visit the instructor or TA during respective virtual office hours. This is preferred approach specifically if you run into project related issues & you need help to progress. Outside the office hours, you can also send the code or the screenshot of error message/output by MS Teams. Please do NOT use the email system.

Class Recordings

Instructor will try to record all the sessions in MS Teams so that all students can use them for future reference. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: "As a Comet, I pledge honesty, integrity, and service in all that I do."

Plagiarism has no place in the college education. UTD policies require all the professors to forward all suspicious cases to academic disciplinary committee. So, do not copy the code from others & do not give your code to others.

Please review the UTD policy and guideline on Student behavior and conduct, academic honesty and integrity in https://www.utdallas.edu/conduct/integrity/ and UTD BAIT team in https://www.utd.edu/conduct/bait/

Course Access and Navigation
This course can be accessed using your UT Dallas NetID account on the eLearning website.

Please see the course access and navigation section of the Getting Started with eLearning webpage for more information.

To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication
This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources
Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties
The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Classroom Conduct Requirements Related to Public Health Measures

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Fall 2021 semester to the extent allowed by state governance. We strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Everyone is expected to complete the Required Daily Health Screening. Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003.

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students. Please see http://go.utdallas.edu/academic-support-resources.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.