


## *CS/CE/SE 3354 Course Syllabus - Fall 2024*

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### Course Information

	<b>Course Number/Section:</b>	CS/CE/SE 3354 - Section 502
	<b>Course Name:</b>	Software Engineering
	<b>Term:</b>	Fall 2024
	<b>Meetings:</b>	Tu & Th 5:30pm - 6:45pm @ ECSS 2.410

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### Professor Contact Information

<b>Professor:</b>	Barbara Maweu
<b>Office Phone:</b>	(972) 883-4523
<b>Office Location:</b>	ECSN 3.608
<b>Email Address:</b>	<a href="mailto:barbara.maweu@utdallas.edu">barbara.maweu@utdallas.edu</a> (Please type 3354.502 in the subject field)
<b>Online Office Hours:</b>	Thursday 1:30pm – 3:00pm (Call-in MS-Teams Class Channel)

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### TA's Contact Information

<b>TA:</b>	TBA
<b>TA Office Location:</b>	TBA
<b>TA Email Address:</b>	TBA
<b>TA Office Hours:</b>	TBA

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### Course Pre-requisites, Co-requisites, and/or Other Restrictions

- **Prerequisites:** CS/CE 2336 or CS/CE 2337 or CS 3333 and CS/CE 2305 or equivalent.
- **Co- requisites:** ECS 3390. (Same as CS/SE 3354)

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### Course Description

- 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.

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### Student Learning Objectives/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

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### Required Textbooks and Materials

Ian Sommerville, "Software Engineering", 10<sup>th</sup> ed., Pearson, 2015, ISBN: 978-0133943030.

### Suggested Course Materials

- Kung D., “Object-Oriented Software Engineering: An Agile Unified Methodology”, 1st ed., McGraw Hill, ISBN: 978-0073376257.
- IEEE Software Engineering Body of Knowledge (SWEBOK v3), 2014 (available via eLearning References)
- Craig Larman, “Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development”, Prentice-Hall, ISBN: 013 148 9062, 2005.

### Assignments Calendar (Tentative - Topics, Reading Assignments, Due Dates, Exam Dates)

WEEK	DATES	COURSE CHAPTER	READING ASSIGNMENT
1	08/20 – 08/22	Syllabus, Ch 1: Introduction	Read Ch 1
2	08/27 – 08/29	Ch 2: Software processes Ch 3: Agile software development	Read Ch 2 Read Ch 3
3	09/03 – 09/05	Ch 4: Requirements engineering	Read Ch 4
4	09/10 – 09/12	Ch 5: System modeling	Read Ch 5
5	09/17 – 09/19	Ch 6: Architectural design	Read Ch 6
6	09/24 – 09/26	Ch 7: Design and implementation	Read Ch 7, Software Design
7	10/01 – 10/03	Ch 8: Software testing	Read Ch 8, Junit Tutorial
8	10/08 – 10/10	Unit testing with Junit	
9	10/15 – 10/17	Ch 17: Distributed software engineering Ch 18: Service-oriented software engineering	Read Ch 17 Read Ch 18
10	10/22 – 10/24	Ch 22: Project management	Read Ch 22
11	10/29 – 10/31	Ch 23: Project planning	Read Ch 23
12	11/05 – 11/07	Ch 24: Quality management Ch 25: Configuration management	Read Ch 24 Read Ch 25
13	11/12 – 11/14	Ch 25: Cont'd   Review	
14	11/19 – 11/21	Final Project Discussions   Final Exam	11/21: Final Exam
15	11/26 – 11/28	Fall break – No classes	
16	12/03 – 12/05	Final Project presentations	

### FINAL PROJECT CALENDAR (Submissions via eLearning – No Exceptions) (Tentative)

WEEK	DATES	FINAL PROJECT	GROUP(S)	SUBMISSION PER GRP	STATUS
2	08/30	Form Groups	All	• In Class	Due
4	09/13	Proposal	All	• Via eLearning • One designated	Due
9	09/18	Deliverable # 1	All	• Via eLearning • One designated	Due
13	10/18	Deliverable # 2	All	• Via eLearning • One designated	Due
14	11/19	Final Presentation	TBD	• In Class • All team members	Due
14	11/21	Final Presentation	TBD	• In Class • All team members	Due
16	12/03	Final Presentation	TBD	• In Class • All team members	Due
16	12/05	Final Presentation	TBD	• In Class • All team members	Due

**ASSIGNMENT CALENDAR** (*Tentative*)

WEEK	DATES	ASSIGNMENT	STUDENT LEARNING OBJECTIVES	STATUS
			DEMONSTRATED ABILITIES, APPLICATION & UNDERSTANDING OF:	
3	09/03 – 09/05	HW 1	<ul style="list-style-type: none"> <li>Software engineering,</li> <li>Software process models,</li> <li>Agile approaches to software development and project planning.</li> </ul>	Issued
4	09/10 – 09/12	HW 1		Due
4	09/10 – 09/12	HW 2	<ul style="list-style-type: none"> <li>Software requirements engineering techniques.</li> </ul>	Issued
5	09/17 – 09/19	HW 2		Due
5	09/17 – 09/19	HW 3	<ul style="list-style-type: none"> <li>System modeling techniques, and</li> <li>How to use various UML diagrams to draw different types of system models.</li> </ul>	Issued
6	09/24 – 09/26	HW 3		Due
6	09/24 – 09/26	HW 4	<ul style="list-style-type: none"> <li>Architectural design and</li> <li>Implement architectural patterns</li> </ul>	Issued
7	10/01 – 10/03	HW 4		Due
7	10/01 – 10/03	HW 5	<ul style="list-style-type: none"> <li>Software design principles,</li> <li>Software implementation related topics including concerns and solutions.</li> </ul>	Issued
8	10/08 – 10/10	HW 5		Due
9	10/15 – 10/17	HW 6	<ul style="list-style-type: none"> <li>Understand distributed software engineering systems and</li> <li>service-oriented software engineering systems</li> <li>Utilize JUnit unit testing framework.</li> </ul>	Issued
10	10/22 – 10/24	HW 6		Due
10	10/22 – 10/24	HW 7	<ul style="list-style-type: none"> <li>Understand Critical Path Method (CPM)</li> <li>Implement Critical Path Method (CPM)</li> </ul>	Issued
11	10/29 – 10/31	HW 7		Due
11	10/29 – 10/31	HW 8	<ul style="list-style-type: none"> <li>Understand software project planning</li> <li>Understand software quality metrics</li> </ul>	Issued
12	11/05 – 11/07	HW 8		Due

**Quiz Calendar**

Open on eLearning every week	8:00 am Friday	Due latest following Saturday 8:00 am
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**Grading Policy** (*including percentages for assignments, grade scale, etc.*)

Quizzes	20%	
Final Exam	25%	
Homework Assignments	20%	2.5% each assignment
Final Project & Presentation	35%	15% each deliverable + 5% Presentation

**Final letter grades assignment:**

98-100 A+	88-89.99 B+	78-79.99 C+	68-69.99 D+	Below 60 F
92-97.99 A	82-87.99 B	72-77.99 C	62-67.99 D	
90-91.99 A-	80-81.99 B-	70-71.99 C-	60-61.99 D-	

## Course & Instructor Policies

<b>Extra Credit</b>	No extra credit offered.
<b>Late Work</b>	No late submission accepted.
<b>Special Assignments</b>	No special assignments offered.
<b>Final Group Project</b>	<ul style="list-style-type: none"> <li>• There will be a group/team final project with 2 planned increments (equal weight): 30%. <b>(Refer to Final Group Project Calendar for due date)</b></li> <li>• All students are required to participate in all presentations. Participation is part of the project score. 5%</li> <li>• Group members are required to work together throughout the project. You should plan on committing your time and effort to teamwork. Groups that do not work together produce very poor results and score poorly. Keep this in mind. Make sure perform well in your group.</li> <li>• Groups or group members should report to the instructor as soon as possible if there are problems in the team that will affect teamwork.</li> <li>• Students that opt to code in the final phase of the project should brush up on coding skills.</li> <li>• The final project that will be posted in eLearning and should be turned in via <b>eLearning ONLY</b>.</li> <li>• <b>No e-mail submissions are accepted. No late submissions are accepted.</b></li> </ul>
<b>Assignments</b>	<ul style="list-style-type: none"> <li>• There will be 8 homework assignments during the semester. <b>(Refer to Assignment Calendar for due date)</b></li> <li>• Homework will be posted in eLearning and should be turned in via <b>eLearning ONLY</b>.</li> <li>• Every student submits his/her work very easily via eLearning, you can do it, too.</li> <li>• <b>If you encounter a problem during eLearning submission, please contact 24/7 eLearning Help IMMEDIATELY. This help is available 24/7 at:</b>  <b>eLearning Help URL:</b> <a href="http://www.utdallas.edu/elearning/eLearningHelpdesk.html">http://www.utdallas.edu/elearning/eLearningHelpdesk.html</a> <b>eLearning Help Phone:</b> 1 866 588 3192</li> <li>• <b>No e-mail submissions are accepted. No late submissions are accepted. So, please plan accordingly, do not leave your submissions to the last minute. Any submission that is missed will be graded with a zero. Please do not insist for exceptions.</b></li> </ul>
<b>Quizzes</b>	<ul style="list-style-type: none"> <li>• Instead of midterm exams, we will have quizzes 20%. <b>(Refer to Quiz Calendar for due date)</b></li> <li>• Quizzes will occur every Friday, covering the material discussed during the week.</li> <li>• Exceptions will be announced via email (there will be no quizzes during exam weeks or the final week of class).</li> <li>• Quizzes are open books and open notes. Do not search on the Web for a solution to a problem.</li> <li>• Quizzes may be taken between 8:00 am Fridays to 8:00 am Saturdays.</li> <li>• Quizzes can be taken as many times as possible until 8:00 am Saturdays till you get full score.</li> <li>• Quizzes may be excused; quizzes cannot be made up; excused absences result in a null grade.</li> <li>• Quizzes will be administered online in the eLearning/Testing Folder.</li> <li>• Quizzes will last 20 minutes from the time start (and then will be automatically submitted).</li> <li>• Quiz results will be available in eLearning after the due date/time.</li> </ul>
<b>Make-up exams</b>	To ensure fair treatment of each student, a make-up exam can only be offered in case of an emergency such as health, University approved travel, birth, death and should be accompanied by an official document (doctor's note, birth/death certificate, University approved travel authorization) with the condition that the arrangements are made <b>BEFOREHAND</b> .
<b>Grading Criteria</b>	All assignments, quizzes and exams (other than the term project) are to be individual efforts. Please do not collaborate with other students. Copying assignments or exams, in whole or in part, from other sources will be considered an act of scholastic dishonesty. This policy includes copying from other students, from assignments/quizzes from previous semesters or from the Internet.
<b>Class Materials</b>	Class materials including syllabus, weekly course slides, assignments, quizzes, and will be made available in eLearning to all students registered for this class as they are intended to supplement the

	classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> .
<b>Class Attendance</b>	To accommodate the different needs of students, attendance <b>will not be taken</b> for this course. Though attendance <b>will not be taken</b> , as per the University requirements, regular class participation is expected. It is the student's responsibility to attend the lectures in person. Students who fail to participate in class regularly are inviting scholastic difficulty. To benefit the most from this class, please attend classes, engage in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures. Successful participation is defined as consistently adhering to the University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> .
<b>Class Participation</b>	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures. Successful participation is defined as consistently adhering to the University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> .
<b>Class Recordings</b>	Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> . The instructor may record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless The Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. 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. Failure to comply with these University requirements is a violation of the <a href="#">Student Code of Conduct</a> .

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## Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

## **Academic Integrity**

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

## **Email Use**

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

## **Withdrawal from Class**

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

## **Student Grievance Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is

not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

### **Incomplete Grade Policy**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

### **Disability Services**

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22

PO Box 830688

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

### **Religious Holy Days**

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

### **Off-Campus Instruction and Course Activities**

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean. ([http://www.utdallas.edu/Business\\_Affairs/Travel\\_Risk\\_Activities.htm](http://www.utdallas.edu/Business_Affairs/Travel_Risk_Activities.htm))

***These descriptions and timelines are subject to change at the discretion of the Professor.***