

SE 4352 Software Architecture and Design

Fall 22 Course Syllabus

Course Description

Introduction to software design with emphasis on software system's architectural design. Models of software architecture. Architecture styles and patterns, including explicit, event-driven, client-server, and middleware architectures. Decomposition and composition of architectural components and interactions. Use of non-functional requirements for tradeoff analysis. Component based software development, deployment and management

Course Information

Course Title: Software Architecture and Design
Course Number: SE 4352.001
Term: Fall 2022
Meeting At: Tuesday & Thursday 1:00pm - 2:15pm in ECSS 2.306
Credit Hours: 3

Instructor's Contact Information

Name: Dr. Michael Christiansen
Email: michael.christiansen@utdallas.edu
NetID: mgc013000
Office: ECSS 4.201
Office Hours: Tuesday and Thursday 2:30-3:30PM and any time I am available via MS Teams

Teaching Assistant Contact Information

Name: Jaeseong Lee
Office Hours: Monday & Wednesday 2:30pm-3:30pm
Office: EECS 4.215
Email Address: jxl115330@utdallas.edu

Name: Ravishka Rathnasuriya
Office Hours: Tuesday & Wednesday 11.00AM - 12.00 PM
Office: ECSS 4.620
Email Address: rsr200002@utdallas.edu

Academic Calendar

- Classes Start: 8/22
- Last Day of Class: 12/8
- Midterm Exam: Oct 8-12 in the UTD Testing Center. Study guide will be provided.
- Final Exam: Dec 13-16 in the UTD Testing Center. Study guide will be provided.

See the official UTD calendar for university holidays and closings [here](#).

Notice: The testing center requires that students reserve a seat on the exam dates through the UTD Testing Center site [here](#). There will be no opportunity to take exams outside of the assigned dates. Reserve seats for both the Midterm and Final Exams ASAP.

Course Prerequisites

1. SE 3306 Mathematical Foundations of Software Engineering
2. CE/CS/SE 3354 Software Engineering

Course Learning Objectives

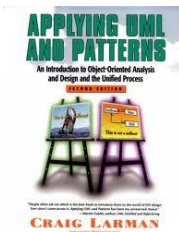
- Understand the need for software architecture and relationship to low-level design
- Develop architectural approaches from requirements and manage traceability between architecture and requirements
- Analyze tradeoffs among multiple architectural alternatives
- Utilize quality attributes when designing software architectures
- Recognize architectural patterns and apply them appropriately
- Recognize security risks and solutions in the design of software architectures
- Describe and document a software architecture

Required Textbook



Software Architecture In Practice (Second Edition)
Addison-Wesley (2003)
By Len Bass, Paul Clements, and Rick Kazman
ISBN: 0321154959

Supplemental Textbook and Materials



Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development, Second or Third Edition by Craig Larman.

Other materials as provided in the “Supplemental Materials” folder of the eLearning site.

Grading Policy

The grade will be determined as follows:

- The final course grade will be calculated against the following factors:

Phase I Design Project	10%
Phase II Design Project	20%
AWS Development Project	5%
Homework Assignments	10%
Class Attendance	5%
Midterm Exam	20%
Final Exam	30%

- No bonus work, make-up work, dropped scores, or other means of raising your grade will be provided.

Undergraduate Grade Ranges and GPA Points

	Score	Letter Grade	GPA
A+	$X \geq 97$	A+	4.00
A Excellent	$93 \geq X < 97$	A	4.00
A-	$90 \geq X < 93$	A-	3.67
B+	$87 \geq X < 90$	B+	3.33
B Good	$83 \geq X < 87$	B	3.00
B-	$80 \geq X < 83$	B-	2.67
C+	$77 \geq X < 80$	C+	2.33
C Fair	$73 \geq X < 77$	C	2.00
C-	$70 \geq X < 73$	C-	1.67
D+	$67 \geq X < 70$	D+	1.33
D Poor	$63 \geq X < 67$	D	1.00
D-	$60 \geq X < 63$	D-	0.67
F Failure	< 60	F	0.00

Attendance Policy

University and department policy is students attend live, face to face lectures and to record attendance when possible. My policy is to record attendance for live lectures only. This is accomplished by circulating an attendance sheet for each class meeting. It is the responsibility of each student to ensure that their attendance is recorded during the lecture only.

Cheating the process (e.g. having a friend sign-in for you) will be reported to the university.

It is understood that some lectures may be missed for valid reasons e.g. sickness. But the course policy stands, attendance is only counted for signed roll sheets. To offset this inequity, each student receives an additional point to their final course grade. This extra point will more than offset the penalty of missing a few days throughout the semester.

Classroom Policy

Students are encouraged to attend the live lectures, when available, in accordance with university and department policy.

Students will be required to interact with their assigned project teams regardless of their locality or status as an asynchronous student.

University policies can be found [here](#).

The materials in this syllabus are subject to change at the professor's discretion.