Software Architecture and Design  
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:** Spring 2020

**Meeting At:** Tuesday, Thursday 4:00pm-5:15pm @ ECSS 2.410

**Credit Hours:** 3

# Instructor's Contact Information

**Name:** Dr. Michael Christiansen

**Office Number:** 972 883 6906 Note: email is only reliable method of leaving messages

**Email:** [michael.christiansen@utdallas.edu](mailto:michael.christiansen@utdallas.edu)

**Office:** ECSS 4.201

**Office Hours:** Monday and Wednesday 1:00 PM to 2:00 and by appointment.

**eLearning Site:** Our eLearning site contains all announcements, slides, assignments, and other materials for this course.

# Teaching Assistant Contact Information

**Name:** Hung-Jui Guo

**Office Hours:** Mon & Wends 12-1PM

**Office:** ECSN 2.114

**Email Address:** hxg190003@utdallas.edu

# Academic Calendar and Events

* Classes Start: 1/13
* Last Day of Class: 4/30
* Midterm Exam: 2/27 during class
* Final Exam: Thursday, 5/7, 5:00PM - 7:45PM in ECSS 2.410

See the official UTD calendar for university holidays and closings [here](https://www.utdallas.edu/academiccalendar/files/Academic_Calendar_Spring_2020.pdf).

# Course Prerequisites

1. SE 3306 Mathematical Foundations of Software Engineering

2. CE/CS/SE 3354 Software Engineering

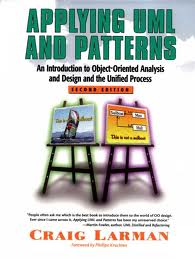
# Course Objectives

1. Understand the need for software architecture and relationship to low-level design
2. Develop architectural approaches from requirements and manage traceability between architecture and requirements
3. Analyze tradeoffs among multiple architectural alternatives
4. Utilize quality attributes when designing software architectures
5. Recognize architectural patterns and apply them appropriately
6. Recognize security risks and solutions in the design of software architectures
7. 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** | 5% |
| **Phase II Design Project** | 15% |
| **Development Project** | 5% |
| **Homework Assignments** | 10% |
| **Class Attendance** | 5% |
| **Midterm Exam** | 25% |
| **Final Exam** | 35% |

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

# Classroom Policy

Students that have four consecutive unexcused absences will fail the course. Department Policy

Students that miss three consecutive unexcused absences will have their final grade reduced by one letter grade for every infraction. Department Policy

Attendance will be taken and verified for every class meeting. Cheating on the roll will be reported as academic dishonesty.

**University policies can be found by visiting** [**http://go.utdallas.edu/syllabus-policies**](http://go.utdallas.edu/syllabus-policies)**.**

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