

Course Overview

Software Architecture

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February 23, 2026

University of Queensland



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- Using *architecture patterns* to structure software systems to be *maintainable*
- How to build software that is *reliable* and *fault tolerant*
- How to build software that is *scalable*

What will we be doing?

Lectures

- Learn common *architecture patterns*

Case Studies

Practicals

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- Package software components into *Docker* containers

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- Develop stateless and persistent *RESTful web APIs*
- Package software components into *Docker* containers
- Deploy containers to cloud platforms using *Terraform*

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- Develop stateless and persistent *RESTful web APIs*
- Package software components into *Docker* containers
- Deploy containers to cloud platforms using *Terraform*
- Use cloud platform tools to *monitor* and *scale* applications

§ Assessment

Assessment

Cloud Infrastructure Assignment 40%

 API Functionality 10%

 Deployed to Cloud 10%

 Scalable Application 20%

Architecture Presentation 30%

Capstone Project 30%

(Delivering Quality Attributes Project)

Cloud Infrastructure

1. Build a *RESTful web API* according to our specification
2. *Test* that the API satisfies the specification
3. *Deploy* the API to a cloud platform
4. *Scale* the API to handle *variable* and *high* loads

Capstone Project

1. Teams will be allocated a project
2. *Design* and *implement* the project

Architecture Presentation

- Team presents details of project architecture
 - *Everyone* presents
- *Individuals* present on different sets of questions
 - Compare and contrast with another architectural pattern
 - Pros and cons of architecture
 - Implementation characteristics of design
 - Potential security risks of architecture
- *Everyone* is expected to understand entire architecture
 - Questions can be directed to *anyone*

AI

- Great tool for producing code
 - *Accuracy* is not so great
- *Hallucinates* about details of API spec
- Attempts to *rewrite* Learner Lab or UQ security policies
 - *Breaking* test runner
- Describe how you use AI in assignments
 - Include logs of AI tool history

§ You and Us

Who are we?



Richard Thomas



Thuy Dao



Millie Hughes



Zaidul Alam



Vy Ho



Nimesh Garg



Cameron Badman

Question

Who are *you*?

Course Website

All course material is hosted on the course website

- <https://csse6400.uqcloud.net>

If you find any *errors* or wish to suggest any *improvements*,
please submit a pull request on GitHub

- <https://github.com/CSSE6400/software-architecture>

GitHub Username Registration Form: 6pm on Feb. 23¹

You need access to the CSSE6400 organisation on GitHub

- *Practicals* – Access to code
- *Assessment* – Most submissions



<https://forms.gle/ukuiruE2Wt2k5xE89>

¹Yes, that is *today*