

COMP 4350 Software Engineering 2

Description: Advanced treatment of software development methods. Topics will be selected from requirements gathering, design methodologies, prototyping, software verification and validation.

Prerequisite: COMP 3010 and COMP 3350 and COMP 3380.

The core component of this course is a 5-6 member team group project. The current project scope includes a cloud based database/application/web server implemented using the group's choice of framework. The server system must be accessed via a combination of a native mobile application and a web client. The students are also expected to use modern distributed version control and project tracking to manage their code and schedule, respectively.

Course Topics:

1. Software development environment (2 weeks)
 - enterprise computing (and how it differs from desktop computing)
 - code management (useful for the project so cover it early)
2. Architecture design (1-2 weeks)
 - selection of the system architecture
 - architecture design decisions
3. System design (2 - 3 weeks)
 - review of basic design patterns from 3350
 - enterprise design patterns
4. Refactorings (2 – 3 weeks)
 - review of refactorings from 3350 and enterprise refactorings
5. Quality assurance (2 – 3 weeks)
 - testing strategies
 - test-first development
6. Interaction design (1 week or less)
 - importance of good interaction design
7. Performance Issues (1 week)
 - performance monitoring
8. Safety-critical systems (1 week)
 - issues specific to safety-critical systems

Recommended Text: none.