



# COMP6750

## Applications Modelling and Development

Session 1, Online-scheduled-weekday 2022

*School of Computing*

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## General Information

Unit convenor and teaching staff

Convenor and Lecturer

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Credit points

10

Prerequisites

Corequisites

Co-badged status

COMP2750

Unit description

This unit is an intermediate unit for the processes, methods, techniques and tools that organisations use to determine how they should conduct their business, with a particular focus on how computer-based technologies can most effectively contribute to the way business is structured. Study focuses on the fundamental concepts and models of applications development so that they can understand the key processes related to building functioning applications and appreciate the complexity of applications development. The unit emphasises program development and incorporates the software development life cycle, requirements gathering, designing a solution, and implementing and testing a solution in a programming language.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

**ULO1:** Demonstrate the ability to communicate software requirements and designs,

clearly and effectively.

**ULO2:** Practice the key phases of the software development life cycle (SDLC) including requirements engineering, analysis, design, basic development and testing.

**ULO3:** Demonstrate an understanding of alternative SDLC models

**ULO4:** Demonstrate an understanding of the concepts and tools needed to successfully design and build an application

**ULO5:** Integrate an application with a database or other form of persistent storage

## General Assessment Information

Details for each assessment will be available via iLearn.

You are encouraged to:

- set your personal deadline earlier than the actual one
- keep backups of all your important files
- seek for assistance in the early stages rather than closer to the due date

## Quizzes

**Submission Method:** via timed online iLearn quizzes during the registered SGTA class time.

**Late Submission:** Not accepted. The quizzes must be undertaken at the time indicated in the unit guide. Should the activity be missed due to illness or misadventure, Special Consideration may be applied.

## Assignments

**Submission Method:** via iLearn submission links. For Assignment-3 viva, if absent during the group presentation, unless there is a special consideration approved, students will be given zero marks for the entire Assignment-3.

**Late Submission:** Late submissions will be accepted but will incur a penalty unless there is an approved Special Consideration request. A 12-hour grace period will be given after which the following deductions will be applied to the awarded assessment mark: 12 to 24 hours late = 10% deduction; for each day thereafter, an additional 10% per day or part thereof will be applied until five days beyond the due date. After this time, a mark of zero (0) will be given. For example, an assessment worth 20% is due at 5 pm on 1 January. Student A submits the assessment at 1 pm, 3 January. The assessment received a mark of 15/20. A 20% deduction is then applied to the mark of 15, resulting in the loss of three (3) marks. Student A is then awarded a final mark of 12/20.

## Special Consideration

If you cannot submit on time because of illness or other circumstances, please apply for special consideration as soon as possible through <https://ask.mq.edu.au/>. *Note: applications for Special Consideration Policy must be made within 5 (five) business days of the due date and time.*

## Assessment Tasks

| Name                                                | Weighting | Hurdle | Due           |
|-----------------------------------------------------|-----------|--------|---------------|
| <a href="#">Requirements Gathering and Analysis</a> | 25%       | No     | Study Break-1 |
| <a href="#">Application Design</a>                  | 25%       | No     | Week 10       |
| <a href="#">Diagnostic Quiz in Workshops</a>        | 25%       | No     | Weeks 4,9,13  |
| <a href="#">Application Development and Testing</a> | 25%       | No     | Week 13       |

### Requirements Gathering and Analysis

Assessment Type <sup>1</sup>: Case study/analysis

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Study Break-1**

Weighting: **25%**

This assignment will develop and test your skills in requirements gathering, specification, analysis and modelling.

On successful completion you will be able to:

- Demonstrate the ability to communicate software requirements and designs, clearly and effectively.
- Practice the key phases of the software development life cycle (SDLC) including requirements engineering, analysis, design, basic development and testing.
- Demonstrate an understanding of alternative SDLC models

### Application Design

Assessment Type <sup>1</sup>: Design Task

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 10**

Weighting: **25%**

This assignment will develop and test your skills in designing applications for the given case study

On successful completion you will be able to:

- Demonstrate the ability to communicate software requirements and designs, clearly and effectively.
- Practice the key phases of the software development life cycle (SDLC) including requirements engineering, analysis, design, basic development and testing.
- Demonstrate an understanding of alternative SDLC models
- Demonstrate an understanding of the concepts and tools needed to successfully design and build an application
- Integrate an application with a database or other form of persistent storage

## Diagnostic Quiz in Workshops

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 14 hours

Due: **Weeks 4,9,13**

Weighting: **25%**

Quizzes to determine students individual strengths, weaknesses, knowledge and skills to develop a baseline of what students know about the topic.

On successful completion you will be able to:

- Demonstrate the ability to communicate software requirements and designs, clearly and effectively.
- Practice the key phases of the software development life cycle (SDLC) including requirements engineering, analysis, design, basic development and testing.
- Demonstrate an understanding of alternative SDLC models
- Demonstrate an understanding of the concepts and tools needed to successfully design and build an application

## Application Development and Testing

Assessment Type <sup>1</sup>: Design Implementation

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Week 13**

Weighting: **25%**

This assignment will develop and assess your design, development and testing applications for the given case study.

On successful completion you will be able to:

- Demonstrate the ability to communicate software requirements and designs, clearly and effectively.
- Practice the key phases of the software development life cycle (SDLC) including requirements engineering, analysis, design, basic development and testing.
- Demonstrate an understanding of alternative SDLC models
- Demonstrate an understanding of the concepts and tools needed to successfully design and build an application
- Integrate an application with a database or other form of persistent storage

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### CLASSES

COMP6750 is taught via lectures and SGTA Classes.

### Delivery Modes

At the time of writing this unit guide, the plan is:

- **Lectures** will be delivered online during the entire semester.
- **SGTA classes** will be delivered online during the entire semester. Please check the timetable for the specific times and types of sessions.
- All **assessments** will be online.

The online delivery of lectures and online SGTA will be via Macquarie University's Zoom web conferencing system (<https://macquarie.zoom.us/>). You will be able to log in using your Macquarie OneID.

Any changes to this plan will be announced in iLearn.

### Lectures:

- Lectures are used to introduce new material, provide motivation and context for your

study, guide you in what is important to learn and explain more difficult concepts.

- There are 2 hours of lectures per week

## **SGTA Classes:**

- **Note:** SGTA Classes commence in Week-2
- These are small group classes that allow you to interact with your peers and with a tutor who has a sound knowledge of the subject. This also gives you a chance to practice your technology skills.
- You will need to enrol and attend the SGTA Class that you've enrolled in.
- SGTA Classes will be providing you with practical experience in design and development processes. The content of the workshop may overlap or sometimes be ahead of the lecture content.
- If your workshop falls on a public holiday, you are expected to attend & participate in another workshop as a makeup class
- For details of days, times and rooms consult the [timetables webpage](#).

## RECOMMENDED TEXTS AND/OR MATERIALS

### **Textbook**

There are no required textbooks for this unit. However, every week you will be provided with lecture notes and references for further reading

## UNIT WEBPAGE AND TECHNOLOGY USED AND REQUIRED

### **Websites**

The web page for this unit can be found at: [here](#)

### **echo360**

Digital recordings of lectures are available. Read instructions [here](#).

### **Discussion Boards**

The unit makes use of discussion boards hosted within [ilearn](#). Please post questions of general interest there (for example, about assessment tasks), they are monitored by the unit staff but students may also provide answers.

## FEEDBACK

You have many opportunities to seek and receive feedback. The feedback that you receive also plays an important role in your learning. Make sure you read the feedback you are given, attend lectures that provide assignment feedback and compare your solution with sample solutions provided. You may also arrange to meet with your tutor or the lecturer. Consultation hours will be provided in some of the weeks. Each week, you will be given activities and problems to solve in

the SGTAs. This will at times involve contributing to a group of students and presenting solutions to the class. The solutions provided will help you to understand the material in the unit and prepare you for the work in assignments. You must keep up with these problems every week. Assignments have been specially designed to deliver continuous feedback on your work.

Each week you should:

- Attend lectures, take notes, ask questions
- Attend your SGTA classes and seek feedback from your tutor on your work
- Read assigned reading material/Watch lecture recording, add to your notes and prepare questions for your lecturer or tutor
- Start working on any assignments immediately after they have been released.

Lecture notes/videos are made available each week but these notes are intended as an outline of the lecture only and are not a substitute for your notes or reading of the other additional material.

## Unit Schedule

**Tentative teaching schedule, subject to change:**

|                                                                                                                                                                                                                                                      |                                                                                 |                |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------|------------------------|
| 1                                                                                                                                                                                                                                                    | Unit Overview + Information Systems + SDLC process                              | Y.Wang         | No Workshops this week |
| 2                                                                                                                                                                                                                                                    | Development Methodologies + Agile Modelling                                     | Y.Wang         |                        |
| 3                                                                                                                                                                                                                                                    | Project Management                                                              | Y.Wang         |                        |
| 4                                                                                                                                                                                                                                                    | Discovering Requirements                                                        | Y.Wang         | Online Quiz 1 due      |
| 5                                                                                                                                                                                                                                                    | Documenting System Requirements through diagrams-1                              | C.Ramakrishnan |                        |
| 6                                                                                                                                                                                                                                                    | Documenting System Requirements through diagrams-2, Validation, and Prototyping | C.Ramakrishnan |                        |
| 7                                                                                                                                                                                                                                                    | Designing Output, Input                                                         | C.Ramakrishnan |                        |
| <p><b>Assignment-1 due (in the first week of the study break)</b></p> <p>Teaching Break (2 weeks) 11th April 2022 to 26th April 2022</p> <p>Students are expected to catch up with unit content (Weeks 1-7) and continue working on Assignment 2</p> |                                                                                 |                |                        |
| 8                                                                                                                                                                                                                                                    | Designing Databases                                                             | C.Ramakrishnan |                        |
| 9                                                                                                                                                                                                                                                    | Human-Computer Interaction                                                      | C.Ramakrishnan | Online Quiz 2 due      |



|    |                                     |                |                                       |
|----|-------------------------------------|----------------|---------------------------------------|
| 10 | Testing and Quality Assurance       | C.Ramakrishnan | Assignment-2 due                      |
| 11 | Client-side Development             | Y.Wang         |                                       |
| 12 | Server-side Development and Testing | Y.Wang         |                                       |
| 13 |                                     |                | Online Quiz 3 due<br>Assignment-3 due |

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

### The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.