# Staying Healthy @ UQ

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA



Stay home if you are unwell

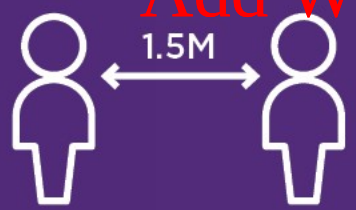
Cover your mouth and nose when you sneeze or cough

Avoid touching your face

Wash your hands thoroughly

Don't share personal items

Clean surfaces




Maintain space between each other

Put used tissues in the bin

Call your General Practitioner (doctor) or UQ Health Care and explain your symptoms



Need the facts? **about.uq.edu.au/coronavirus-advice-uq-community**

# Class recordings

Announcement at start of class:

> *"Students, please be aware that this session is being recorded so it can be made available through Echo360 in Learn.UQ (Blackboard) to all students enrolled in the course. The reason we are recording the class presentations, discussions and chat room logs is because this provides a richer experience for all students and active classrooms help students' learning.*
>
> *The recording may be accessed and downloaded only by students enrolled in the course, including those students studying outside Australia.*
>
> *If you would prefer not be captured either by voice or image in the recording, please let me know before the class starts. I recognise this will be the case for some students and it can be accommodated."*



Suggested options for students not wishing to be recorded:

- Turn off video and mute audio
- Use a proxy name for Zoom (student attendance will still be on record with the Course Coordinator)
- For in-class attendance, student should sit outside the camera span.

Please note that students are not permitted to record teaching without the explicit permission of the Course Co-ordinator. This includes recording classes using Zoom.

For further information:

- PPL 3.20.06 Recording of Teaching at UQ
- UQ website: https://my.uq.edu.au/information-and-services/information-technology/software-and-web-apps/software-uq/zoom

 CRICOS code: 00025B

# About this course

**Course Description:** Program analysis is used for: code optimisation in compilers, finding programs errors and potential security flaws. This course examines techniques for performing static analysis of computer code and the implementation of software tools for performing such analyses. Topics include: data flow analysis; constraint- based analysis; abstract interpretation; and type and effect systems.



**Prerequisite:** COMP4403 Compilers and Interpreters



- how interpreters and compilers work;
- abstract internal representation of programs in terms of abstract syntax trees and symbol tables;
- simple type systems that check the well formedness of a program.

You should also have good programming skills (Java / Scala), and good understanding of discrete mathematics and logic.

# Course Aims and Learning Objectives

1.To teach you how to **automate the detection** of bugs and cyber-security vulnerabilities in programs.
2.To enable you to **evaluate the benefits and limitations** of various static and dynamic program analysis techniqu
3.To empower you to **apply existing program analysis tools** and to **develop new analysis tools**.



2.2 Learning Objectives

After successfully completing this course you should be able to:

1 Explain the fundamental concepts of program analysis.
2 Evaluate the benefits and limitations of alternative program analysis approaches.
3 Use program analysis tools to automatically find errors or check the correctness of programs.
4 Design and implement correct analysis algorithms for simple program analysis tasks.

Part 1 (Weeks 1-10): Static Analysis
Part 2 (Weeks 11-13): Dynamic Analysis

# Assessment (see ECP for details)

| Assessment Task | Due Date | Weighting | Learning Objectives |
|---|---|---|---|
| *Computer-based Assessment* Test 1: Mid-semester concept test | 24 Aug 22 13:00-13:50 Week 5 during Wednesday lecture time | 10% | 1, 2 |
| *Computer-based Assessment* Assignment 1: Static Analysis | 07 Oct 22 16:00 Week 10, Friday 4pm | 30% | 1, 3, 4 |
| *Computer-based Assessment* Assignment 2: Dynamic Analysis | 28 Oct 22 16:00 Week 13, Friday 4pm | 20% | 1, 2, 3 |
| *Exam - during Exam Period (Central)* Final Exam | Examination Period | 40% | 1, 2, 3, 4 |

# Multi-Factor Authentication (MFA)

- UQ will progressively activate multi-factor authentication (MFA) for students during Semester 2
- **MFA** provides an extra layer of security to make sure it's really you when you log into UQ services and systems
- Once you've signed in with your UQ username and password, you will be asked to verify your identity using a second factor e.g. via an app on your mobile phone
- MFA will be rolled out in a staged process and we will email you with information about when you can access MFA
- Visit mfa.uq.edu.au for more information



# Vietnam Internship Opportunity

- 9 Jan - 17 Feb 2023
  - 1 week culture training
  - 4 weeks internship
  - 1 week holiday (Jan 21 - 29)
- $3000 grant available to Australian citizens
  - 1 week culture training
- Cost: $1500
  - Includes training, activities and accommodation
- Information sessions in mid-August
- Questions email: richard.thomas@uq.edu.au
- Apply via: https://tiny.cc/ncp