

# New Course Proposal

## COMP3142 Software Testing and Quality Assurance

### Description

Software plays an important role in our daily life. It is important to construct robust, operational software, especially under limited development budget and time constraint. To address this problem, a thorough verification and validation process is needed. In this course, we will study classic and modern techniques for the automated testing and analysis of software systems for reliability, security, and performance. Throughout the course, students will gain insight into a spectrum of software quality assurance techniques, including but not limited to fuzz testing and symbolic execution. These techniques will be not only studied but also applied in real-world scenarios, providing practical skills that are highly relevant in the ever-evolving landscape of software development.

### Learning Outcomes

1. Understand the fundamental concepts and principles of software testing and quality assurance.
2. Identify and address common quality assurance challenges in software development.
3. Evaluate and select appropriate testing tools and frameworks.
4. Apply various software testing techniques to identify defects and ensure software reliability.
5. Analyse and interpret test results to make informed decisions.
6. Create effective automated test tools.

### Assessment

Assessment Type	Assessment Name	Weight (%)
Test	Quizzes - All topics	10
Assignment	Assignment 1 – Blackbox Fuzzing	20
Assignment	Assignment 2 – Greybox Fuzzing	20
Examination	Final Exam - All topics	50