Course Title:	**Algorithm Design and Analysis**
Course Code:	**COMP611**
Descriptor Start Date:	**18/09/2023**
Descriptor End Date:	**30/01/2025**
POINTS:	**15.00**
LEVEL:	**6**
PREREQUISITE/S:	**COMP610**
COREQUISITE/S:	**None**
RESTRICTION/S:	**None**

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Algorithmic analysis, design techniques, advanced data structures, graph algorithms, numerical algorithms.

LEARNING OUTCOMES

1. Analyse and compare the asymptotic complexities of algorithms.
2. Implement algorithms using design techniques such as divide-and-conquer, dynamic programming, and greedy technique.
3. Explain advanced data structures such as red-black trees and B-trees.
4. Implement and utilise standard graph algorithms for spanning trees, single-source and all-pairs shortest paths, network flow, and routing.

CONTENT

Algorithmic analysis, design techniques, advanced data structures, graph algorithms, numerical algorithms

LEARNING & TEACHING STRATEGIES

- Lectures
- Computer Labs

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Software Assignment	40.00	2,4
Final Exam	60.00	1,2,3,4

Grade Map **MAP1**

A+ A A- Pass with Distinction
B+ B B- Pass with Merit
C+ C C- Pass
D Fail

Overall requirement/s to pass the course:

To pass the course, students must satisfy the stated learning outcomes and achieve a minimum overall grade of C-.

LEARNING RESOURCES

Prescribed text: Corman, Rivest, Stein, Introduction to Algorithms (4th edition).

For further information, contact: Te Ara Auaha - Faculty of Design & Creative Technologies

Principal Programme:	**AK3697, Bachelor of Computer and Information Sciences**
Related Programme/s:	**AK3698** **AK1041** **AK3001** **AK3003** **AK3756** **AK3706**