Course Title:	**Combinatorics and Graph Theory**
Course Code:	**COMP613**
Descriptor Start Date:	**31/01/2025**

POINTS:	**15.00**
LEVEL:	**6**
PREREQUISITE/S:	**MATH503** **COMP500**
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

An introduction to the logical and combinatorial tools and methods used in discrete mathematics and computer science, with an emphasis on axiomatic systems, combinatorial principles, automated reasoning, and graph theories.

LEARNING OUTCOMES

1. Apply propositional and predicate logic inference
2. Analyse properties of axiomatic theories and their models
3. Apply logical and intuitionistic inference in axiomatic set theory
4. Demonstrate automated reasoning and logic programming mechanisms
5. Apply graph theoretical concept in problem solving
6. Apply counting and enumeration techniques in computational tasks

CONTENT

- Counting and Enumeration
- Propositional and First-Order Logic
- Axiomatic theory and its models
- Automated Reasoning
- Graph Theory
- Network and Tree

Disclaimer: Course descriptors may be amended between teaching periods/semesters

LEARNING & TEACHING STRATEGIES

Lectures, Tutorials/labs, Online learning, Discussion forum.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Test 1	30.00	1, 2
Test 2	30.00	3,4
Assignment	40.00	1,2,3,4,5,6

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 this course, students must attempt all summative assessments and achieve a minimum overall grade of C-.

LEARNING RESOURCES

A recommended reading list will be provided.

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

Principal Programme:	**AK3697, Bachelor of Computer and Information Sciences**
Related Programme/s:	**AK1271** **AK1301** **AK1302** **AK2040** **AK3001** **AK3698** **AK3751** **AK3756** **HA1042** **HA1043** **ICE1** **INEXCH1** **SABRD1**