

Course Title:	<b>Programming Concepts and Techniques</b>
Course Code:	<b>COMP500</b>
Descriptor Start Date:	<b>31/01/2025</b>
POINTS:	<b>15.00</b>
LEVEL:	<b>5</b>
PREREQUISITE/S:	<b>None</b>
COREQUISITE/S:	<b>None</b>
RESTRICTION/S:	<b>None</b>

## 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 basics of computer programming to equip students for a career in any branch of IT, the sciences, data analysis or engineering. The fundamentals of writing, designing and testing programs will be developed.

## LEARNING OUTCOMES

1. Write, compile, test and debug small-scale programs that adhere to a programming standard (a, b, c)
2. Develop programs featuring input and output that use sequence, selection, iteration, and functions (a, b, c)
3. Implement programs that store and manipulate data using variables and arrays (a, c)
4. Implement programs that store and manipulate data using structures and file storage (a, c)
5. Demonstrate the ability to use development tools to construct and maintain small-scale programs (e)

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

## CONTENT

- Variables, types, assignment and expressions.
- Control structures, sequence, selection and iteration.
- Logical operators and relational operators.
- Functions, parameters and return.
- Arrays and structures.
- Characters and strings.
- Console input and output.
- File input and output.
- Testing and debugging.
- Programming standards.
- Development tools.

Key to Graduate Capabilities Profile (relevant only for AK3751/AK3719):

- Engineering knowledge
- Problem analysis
- Design/development of solutions
- Investigation
- Tool usage
- The engineer and the world
- Ethics
- Individual and collaborative team work
- Communication
- Project management and finance
- Lifelong learning

## LEARNING & TEACHING STRATEGIES

- Lecture sessions: Lectures will introduce key concepts using a combination of slides and programming demonstrations.
- Lab Tutorial sessions: Formative exercises are issued per lab session. Teaching assistants engage with students seeking help or further clarification on programming topics. Students will actively participate in completing the assigned lab tutorial exercises. Exercises undertaken during the lab tutorial sessions will flow into student-directed study sessions.

## ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Lab	50.00	1,2,3,4
Final Practical Test	50.00	1,2,3,4,5

<b>Grade Map</b>	<b>MAP1</b>
	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-.

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

**Principal Programme:** AK3697, Bachelor of Computer and Information Sciences

**Related Programme/s:** AK1018  
AK1271  
AK1301  
AK2005  
AK2006  
AK2040  
AK3003  
AK3698  
AK3719  
AK3750  
AK3751  
AK3756  
DJ1041  
DJ1042  
DJ1043  
ICE1  
INEXCH1  
SABRD1

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