

# Course Outline

**Title:** PROGRAMMING 1

**Code:** ITECH1000

**Formerly:** CP514

**Faculty / Portfolio:** Faculty of Science

## Program Level:

	AQF Level of Program					
	5	6	7	8	9	10
Level						
Introductory			✓			
Intermediate						
Advanced						

**Pre-requisites:** Nil

**Co-requisites:** Nil

**Exclusions:** (CP514 and CP520 and CP809 and ITECH5000)

**Progress Units:** 15

**ASCED Code:** 020103

## Learning Outcomes:

### Knowledge:

- K1.** identify and use the correct syntax of a common programming language;
- K2.** recall and use typical programming constructs to design and implement simple software solutions;
- K3.** reproduce and adapt commonly used basic algorithms;
- K4.** explain the importance of programming style concepts (documentation, mnemonic names, indentation);

### Skills:

- S1.** utilise pseudocode and/or algorithms as a major program design technique;
- S2.** write and implement a solution algorithm using basic programming constructs;
- S3.** demonstrate debugging and testing skills whilst writing code;
- S4.** describe program functionality based on analysis of given program code

### Application of knowledge and skills:

- A1.** develop self-reliance and judgement in adapting algorithms to diverse contexts;
- A2.** design and write program solutions to identified problems using accepted design constructs

## Values and Graduate Attributes:

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### Values:

- V1. Develop a professional attitude to the design and implementation of software solutions
- V2. Develop problem-solving skills and self-reliance in a program development context

### Graduate Attributes:

Attribute	Brief Description	Focus
Continuous Learning	In a blended learning approach facilitated by the use of a contemporary industry based programming language and development environment requiring planning, development and implementation of software solutions, students will continue to develop their knowledge and skills.	Medium
Self Reliance	Students will participate in a self-directed and collaborative learning environment to develop their theoretical and technical expertise in the field of software development.	Medium
Engaged Citizenship	Students will produce programming solutions which meet industry standards.	Medium
Social Responsibility	Students will use industry standard development environments, programming languages and development techniques to deploy software solutions.	Low

### Content:

Topics may include:

- Overview of software development and where programming fits in.
- Problem-solving techniques, program types and programming languages.
- The use of variables, operators and programming syntax.
- Program logic including the use of branching, loops and identifying logic errors.
- Procedures and functions.
- Introduction to the use of data, data persistence and file input/output.
- Main features of procedural programming.
- Introduction to common software development methodologies.
- Searching and sorting techniques

### Assessment:

Participation in lectures, tutorials and computer laboratory classes. Completion of all tutorial and laboratory worksheets for the semester.

Students are expected to spend time regularly out of scheduled classes by reading reference material as required, reviewing topics already covered in lectures and preparing for forthcoming topics and laboratory classes, and completing assessment tasks.

Assessment for this course will be based on a number of tasks. These may include written assignments, programming tasks and laboratory exercises covering the systems development and programming design. An end of semester examination is based on all aspects of the course.

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Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting
K1, K2, K3, K4, S1, S2, S3, S4, A1, A2	Development of skills and deepening of understanding	Assignments and exercises	40 - 50 %
K1, K2, K3, K4, S2, S3, S4	Participation in class activities, supplementary reading and other activities as suggested in lectures	Examination(s)	50 - 60%

### Adopted Reference Style:

APA

### Presentation of Academic Work:

<https://federation.edu.au/students/assistance-support-and-services/academic-support/general-guide-for-the-presentation-of-academic-work>