

Module code: MOD003484	Version: 6 Date Amended: 27/Nov/2025
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1. Module Title
Software Principles

2a. Module Leader
Md Hasan

2b. School
School of Computing and Information Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
4

3b. Module Type
Standard (fine graded)

4a. Credits
30

4b. Study Hours
300

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

In this module, you'll be introduced to the fundamental concepts needed to understand, design, implement, and test programs written in high-level programming languages using a range of fundamental data types, control structures, and basic data structures. You'll learn a structured design methodology that supports the development of clear, succinct, and logical programs, from the initial idea through to design, implementation, and testing. You will also explore the features provided by modern interactive development environments (IDEs) that support the programmer.

By the end of the module, you'll be able to analyse a simple set of written requirements and design, implement, and test code that meets those requirements using appropriate variables, control and data structures using correct language syntax, and know how to approach program testing and debugging. You will also demonstrate familiarity with the taxonomy of programming languages and the software development life cycle.

6b. Outline Content

Explore and experiment using taught methodological techniques to stimulate, explore, develop and communicate ideas
Background to the nature of Programming languages Software Development life-cycle Employ basic management techniques to facilitate communication and record keeping in a team situation Investigate and use established design methodologies
Explore the nature of algorithms Use basic numerical and logical operators and functions to manipulate simple and multi-dimensional data structures Use iteration and selection techniques to navigate simple and multi-dimensional data structures
Use a range of graphical user interface techniques to interact with users of software

6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

6d. Specialist Learning Resources

Aptana Studio 3 or other IDE

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Use a range of techniques for problem decomposition, decision modelling and algorithm design such that, within a simple problem description, appropriate variables, decisions and repetitive actions can be identified and translated into appropriate code constructs
2	Knowledge and Understanding	To understand programming language families, and competing models of the software development life-cycle
3	Intellectual, practical, affective and transferrable skills	To select appropriate tools and techniques to analyse and design solutions to specific simple scenarios
4	Intellectual, practical, affective and transferrable skills	To create simple scripts to perform a number of operations in turn to achieve a desired effect and to understand the purpose and syntax required to perform conditional and loop statements
5	Intellectual, practical, affective and transferrable skills	To work effectively as a team player, understand different roles within a team and how to administrate effectively within that role

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	36	1 - 5	3 hrs / wk lecture
Other teacher managed learning	24	1 - 5	2 hrs / wk lab
Student managed learning	240	1 - 5	Practicing skills and techniques learnt to master them in order to complete assessment requirements and to be able to understand the following lectures. Some research will be required in order to fully complete the assignments.
TOTAL:	300		

9. Assessment for the above Module Occurrence

The assessment for some modules includes a presentation (see below for details on how this particular module is assessed). We recognise that presenting, especially to a large group, can cause significant anxiety or distress for some students. If this may affect you, please contact your Module Leader or the Disability and Neurodiversity Service as early as possible. We will work with you to consider appropriate reasonable adjustments. Depending on your individual needs, these might include, for example, presenting to a smaller group or presenting only to a member of academic staff.

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1-5	100 (%)	Fine Grade	30 (%)

Coursework

Assessment components for Element 010

Component No.	Assessment Title	Submission Method	Weighting (%)	Components needed for Mark Calculation?
010/1	Coursework Project Proposal- 1500 Words	Canvas	30 (%)	All
010/2	Design and implementation report equivalent to 3500 words	Canvas	70 (%)	

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:

- (a) achieve the qualifying mark for each element of fine graded assessment as specified above
- (b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]