Module Descriptor

Title	Computing Systems		
Session	2025/26	**Status**	Published
Code	COMP07061	**SCQF Level**	7
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Henry Hunter		

Summary of Module

This is a core module for the undergraduate programmes in Computer Games Technology, Business Technology, Computer Networking and Web Development. It also forms part of the BSc Computing. It is an option on a number of other Computing related degrees.

Two complementary aproaches are used in teaching and learning and woven together over the weeks of teaching. In the first approach, students look at different examples of computer systems, hardware and software and learn about the different harware and software components that together form a computer system. In this way, a top-down view of a computer system is formed. Secondly, students learn how computer processors are built up from simple digital logic circuits into distanct components and then to complete CPUs and GPUs.

This top-down/Bottom-up approach is also used to examine the software environments it complemented by a machine level view. This moves from the machine code used bu computers, to the high-level programming languages favoured by human programmers and the processes by which these are translated into machine code for execution on the computer.

The module also introduces the (GCHQ - 'Operational Security Management' discipline) topics: internet, Networks and Applications Security. As each of these topics are covered, students will research, in groups, recent threats gathering new platforms.

Undertaking this module will develop a range of gradute attributes including: critcal thinking, problem solving, effective communicatoin and research skills.

Computers and processors are now an ever present part of our normal liife, found not only in PCs but in mobile phones, digital cameras, game consolesand a myriad of places around the home and workplace. Security is now a core requirement when creating systems and software. This module will introduce students to some of the fundamentals of computer security including internet threats, network security and application security.

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☐	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☒	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Demonstrate an awareness of the range of hardware and software components and devices that are brought together in modern information, entertainment and ubiquitous computer systems showing an understanding of the security issues which are associated with the components.
L2	Identify and use a variety of approaches associated with representation of data
L3	Convey and demonstrate their understanding of the organization and operation of low level computer system organization and architecture.
L4	Identify and describe concepts from operating system and software translation that demonstrate their understanding of bridging the gap from a problem-oriented level to machine execution level.
L5	N/A

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 7** Demonstarte a broad knowledge of the various levels contributing to computer system organisation.
Practice: Applied Knowledge and Understanding	**SCQF 7** Explaing ways in which data may be represented within a computer system and performing conversions between number systems.

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	Illustratingthe steps involved in the detailed execution of instructions at the logic and machine levels and solve related problems in lab exercises.
Generic Cognitive skills	**SCQF 7** Use a range of approaches to address defines and/or routine problems within familiar contaxts.
Communication, ICT and Numeracy Skills	**SCQF 7** Use a standard word processing application and a range of numerical and investigative skills.
Autonomy, Accountability and Working with Others	**SCQF 7** Work with others to solve defined problems

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	24
Laboratory / Practical Demonstration / Workshop	24
Independent Study	152
Please select	
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Course booklet and online resources will be provided/referenced.

Additional text: How Computers work, Ron White

Recommended reading material from:

Computers and Computer Systems, OpenLearn, http://openlern.open.ac.uk/course/view.php?id=2584

Principles of Computer Harware, Alan Clements

Elements of Computing Systems, Nissan & Schocken

Schaums Outline of Computer Architecture

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.

Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**

Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business and Applied Computing
Moderator	Tony Gurney
External Examiner	A Jindal
Accreditation Details	This module is accredited by BCS as part of a number of specified programmes. It is also accredited by Skillset as part of BSc (Hons) Computer Games Technology. GCHQ accreditation.
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	3.1

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Intermediate class Tests 50%, Group Report 50%
Assessment 2
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class test (Written)/Portfollio	☒	☒	☒	☒	☐	100	3

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		

Component 3

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	☐	☐	☐	☐	☐		
Combined total for all components						100%	3 hours

Change Control

What	When	Who
Attendance and Engagement and Equality and Diversity Statements updated.		