MODULE SPECIFICATION

Part 1: Information			
Module Title	Computer Systems Architecture		
Module Code	UFCFDS-15-1	Level	Level 4
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Overview: This module broadens and deepens the students' knowledge and understanding of how complex systems of communicating computing devices operate. The focus of the module is on understanding and experimenting with some of the fundamental issues operating within the layered model of computer architectures. The vulnerability of computer systems to information security threats is also explored.
 	
Educational Aims: The module aims to provide the students with a bedrock of understanding about computer systems that will enable to make sense of, extend and experiment with computing concepts at higher levels of study.
 	
Outline Syllabus: In this module you will cover the following areas:
 	
Logic and its application in simple circuits
Computer Architecture
      Von Neumann Architecture
      Alternative Architectures
 	
Fetch/Execute cycle
Machine code, assembler, high level languages and their relationship one to the other.
Operating Systems: their role, and primary functions.

Processes and Threads   Communications   Information Security: the CIA triad, vulnerabilities and types of control.   Sustainability: The move to low power consumption   **Teaching and Learning Methods:** This module will principally be delivered as combination of lectures and practical sessions with some occasional tutorials and seminars. Students are expected to attend all scheduled classes. We encourage students to be active in their learning. We provide a range of resources and activities to enable them to engage in achieving the learning outcomes.   The lectures will explain theoretical concepts. The theory will be illustrated and illuminated through the use of case studies and by practical sessions during which the students will solve problems and write and experiment with programme code to implement those solutions. As part of their self-directed study time, students are expected to read around the topics presented   The module will be supported by the University's VLE which will be used as a repository for course materials, a forum for discussion and, from time to time, tests and/or quizzes to enable the students to self-test their knowledge.

Part 3: Assessment
The learning outcomes of this module are achieved by a two-pronged approach. Students will gain practical experience of the outcomes though engaging in a project to build a communicating device. The project will be supported during lab-sessions. Students are also expected to work on the project during independent study times. The primary purpose of the lab-sessions will offer time for support in overcoming any challenges and to extend the students thinking.   The theoretical content issues will be tested in the exam.   This approach is replicated at resit except that students will be expected to make contact with the module team for additional support in developing their project.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	40 %	This online two hour exam will take place as summative assessment of theoretical concepts. 24 hour window
Project - Component B		60 %	One or more practical programming task(s)
Resit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A	✓	40 %	This online 2-hour exam provides summative assessment of theoretical concepts. 24 hour window
Project - Component B		60 %	One or more programming tasks

Part 4: Teaching and Learning Methods	
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:
	Module Learning Outcomes **Reference**

	Explain the structure and function of modern computer systems and demonstrate how they can be integrated to create more complex systems to solve real-world problems.	MO1
	Recognise that computers can be viewed as a hierarchy of functional layers and discuss the competing constraints imposed by the close interplay of hardware and software	MO2
	Make use of some of the technical principles and practical details of computer networking, particularly with regard to information security	MO3
	Discuss the information security impacts of architectural decisions for example in relation to the CIA model of security.	MO4

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:* https://rl.talis.com/3/uwe/lists/068AB317-BEA1-3D01-2F38-60FB4A74B620.html?lang=en-GB&login=1	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Computing [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21 Computer Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Mar][SW][Taylors][4yrs] BSc (Hons) 2020-21 Computing {Dual} [Aug][SW][Taylors][4yrs] BSc (Hons) 2020-21 Computing [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Aug][FT][Taylors][3yrs] BSc (Hons) 2020-21 Computing {Dual} [Mar][FT][Taylors][3yrs] BSc (Hons) 2020-21 Computer Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21