Module Descriptor

Title	Virtualisation		
Session	2025/26	**Status**	Published
Code	COMP10064	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Duncan Thomson		

Summary of Module

Virtualisation is becoming an increasingly important part of the IT infrastructure in modern organisations. This module begins by examining the reasons for this change and the various different types of virtualisation available (hardware - type I and II, operating system, storage, network, desktop). It continues by examining in detail the terminology and concepts underlying standard hardware and operating system virtualisation, as well as the techniques required to create and manage basic virtualised systems. A number of widely-used virtualisation systems are introduced, and the module concludes with a look at more advanced and emerging areas, such as common frameworks and standards for managing virtualisation, virtual networking and live migration.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module:

Universal

• Critical Thinker

• Ethically-minded

• Research-minded

Work Ready

• Problem-Solver

• Effective Communicator

• Ambitious

Successful

• Autonomous

• Resilient

• Driven

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 a critical understanding of the terminology and concepts of the main types of virtualisation
L2	Design, implement and manage virtualised systems to meet specified criteria at a professional level
L3	Demonstrate a detailed knowledge and understanding of a specific virtualisation system
L4	N/A
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 10** Understanding the main types of virtualisation and where and why they are used Understanding the underlying models and concepts relating to a range of virtualisation systems
Practice: Applied Knowledge and Understanding	**SCQF 10** Creating and managing virtualised systems with a range of virtualisation systems
Generic Cognitive skills	**SCQF 10**

[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

	Make judgements as to where virtualisation is appropriate Critically evaluate the application of various types of virtualisation to specific scenaria
Communication, ICT and Numeracy Skills	**SCQF 10** Use a range of virtualisation and virtualisation management software
Autonomy, Accountability and Working with Others	**SCQF 10** Exercise autonomy and initiative when implementing systems to meet specific requirements

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	10
Laboratory / Practical Demonstration / Workshop	38
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: The following materials form essential underpinning for the module content and ultimately for the learning outcomes: • Oracle VirtualBox with images for Linux and Windows • VirtualBox Extension Pack (available under Oracle PUEL) for access to VMs using RDP • Access to a number of other virtualisation systems, for example HyperV, VMWare and/or KVM

- Debian GNU/Linux with support for LVM, KVM, bridging software, libvirt support and utilities

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.

Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.

(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 & Applied Computing
Moderator	Steve Eager
External Examiner	R Khusainov
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.13

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Assessment 1: Theoretical Knowledge (50%) Two assessments will assess the theoretical knowledge of the student: - A research-informed report comparing two hypervisors (worth 20% of the marks) - A multi-choice computer-based assessment (worth 30% of the marks)
Assessment 2
Assessment 2: Practical Skills (50%) Two assessments will assess the practical skills of the students: - A lab log book with evidence of completion of tasks in the laboratory (worth 20%) - An implementation to specifications, comprising a demo, short report, and configuration (worth 30%)
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**
Report/Class test	☒	☐	☒	☐	☐	50	1

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Log Book/Practical Assessment	☐	☒	☐	☐	☐	50	1

Component 3

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	☐	☐	☐	☐	☐		
Combined total for all components						100%	2 hours

Change Control

What	When	Who
Attendance and Engagement Procedure nd Equality and Diversity	17/1/25	F.Valentine