

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Virtualisation and Cloud Computing			
Code: COMP09117	SCQF Level: 9 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Computing, Engineering & Physical Sciences		
Module Co-ordinator:	Duncan Thomson		
Summary of Module			
<p>Virtualisation and cloud computing have changed the ways organisations use and plan their computing infrastructure. This module introduces some basic virtualisation concepts, including hypervisors and VMs, containers, and the virtualisation of storage and network services. It then looks at how these concepts can be used to deploy virtual computing, both locally and using cloud technologies.</p> <p>This module is aligned with the UWS graduate attributes:</p> <ul style="list-style-type: none"> • Universal (Knowledge of Discipline, Critical Thinker, Confidence) • Work-Ready (Problem solver, Teamworker, Effective communicator) • Successful (Adaptability, Autonomy, Subject Specialist) 			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
See Guidance Note for details.					

Campus(es) for Module Delivery						
The module will normally be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> New College Lanarkshire
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Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	<input type="checkbox"/>	Term 2	<input checked="" type="checkbox"/>	Term 3	<input type="checkbox"/>
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Learning Outcomes: (maximum of 5 statements)
These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.

At the end of this module the student will be able to:

L1	Demonstrate a broad understanding of the characteristics of virtualisation, virtualised components and cloud computing
L2	Demonstrate an integrated knowledge of the components making up virtualised and cloud-deployed systems
L3	Use a range of tools to deploy and configure virtualised computing systems, both locally and in the cloud

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 Level 9 - Understand and apply the concepts and terminology of virtualisation and cloud computing
Practice: Applied Knowledge and Understanding	SCQF Level 9 - Use a range of tools to manage virtualised computing systems
Generic Cognitive skills	SCQF Level 9 - Consult appropriate documentation when required
Communication, ICT and Numeracy Skills	SCQF Level 9 - Work effectively on the command line - Document computing systems in a professional manner
Autonomy, Accountability and Working with others	SCQF Level 9 - Know when to ask for support or advice when faced with technical problems
Pre-requisites:	Before undertaking this module the student should have undertaken the following:

	Module Code: COMP09024	Module Title: Unix System Administration
	Other:	
Co-requisites	Module Code:	Module Title:

*Indicates that module descriptor is not published.

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 (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	12
Laboratory/Practical Demonstration/Workshop	36
Independent Study	152
	Hours Total 200
**Indicative Resources: (eg. Core text, journals, internet access)	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <ul style="list-style-type: none"> - A computing laboratory with a hypervisor (for example VirtualBox) with permissions to create and runs VMs, and the ability to run (at least) Linux guests - Access from the university to a public cloud computing infrastructure <p>Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.</p> <p>Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.</p>	
(**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: attendance at 80% of classes, and regular participation in any formative assessments (quizzes) on the VLE.

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](#).

In order for the student to complete this module the student will be required to take part in laboratory exercises, including a laboratory-based assessment. Students with substantial physical impairments should be assessed and counselled prior to selecting courses requiring this module. When a student discloses a disability a special needs advisor will agree the appropriate adjustments to be made, consulting with the module coordinator if necessary.

(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
Assessment Results (Pass/Fail)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
School Assessment Board	Business & Applied Computing
Moderator	Steve Eager
External Examiner	R Khusainov
Accreditation Details	n/a
Changes/Version Number	1.0

Assessment: (also refer to Assessment Outcomes Grids below)

Assessment 1: A log book reflecting on parts of the laboratory work, worth 30 marks, and weighted at 30%; this will be due around one week after the lab sessions have

been completed
Assessment 2: An implementation of two virtualised systems, one local and one cloud-hosted, each worth 20 marks, in total weighted at 40%; the timeline for these assessments will be approximately week 9 and week 13 respectively.
Assessment 3: An online multichoice class test, worth 30 marks, and weighted at 30%; this will normally be completed in week 15.
(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.)

Assessment Outcome Grids (See Guidance Note)

Component 1						
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)		Weighting (%) of Assessment Element	Timetabled Contact Hours
Log book		<input checked="" type="checkbox"/>			30%	

Component 2						
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)		Weighting (%) of Assessment Element	Timetabled Contact Hours
Practical implementation			<input checked="" type="checkbox"/>		40%	6

Component 3						
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)		Weighting (%) of Assessment Element	Timetabled Contact Hours
Online class test	<input checked="" type="checkbox"/>				30%	

Combined Total for All Components					100%	
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Change Control:

Version Number: MD Template 1 (2023-24)