Module Descriptor

Title	Agile Cloud Automation		
Session	2025/26	**Status**	
Code	COMP11104	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Jas Semrl		

Summary of Module

This module introduces students to concepts, techniques and technologies for developing cloud-based systems using domain-specific languages (DSLs), NoSQL technology and agile practices. In particular, it will familiarise students with NoSQL principles, with techniques for specifying DSLs and modelling environments, and with designing and developing interoperable infrastructure for heterogeneous software ecosystems using agile practices.

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 understanding of NoSQL principles and technology
L2	Demonstrate a systematic understanding of the specification of DSLs using formal meta-languages
L3	Discuss issues and solution approaches for questions of scalability and consistency
L4	
L5	

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 11** Demonstrate a critical understanding of agile cloud automation.
Practice: Applied Knowledge and Understanding	**SCQF 11** Use a range of specialised techniques and tools in developing an agile cloud automated solution to meet a given set of requirements.
Generic Cognitive skills	**SCQF 11** Critically analyse requirements and design issues in developing a aglile cloud automated solution and interpret test results in evaluating its fitness for purpose.

[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

Communication, ICT and Numeracy Skills	**SCQF 11** Communicate a design for a agile cloud automated solution to a range of audiences.
Autonomy, Accountability and Working with Others	**SCQF 11** Exercise autonomy and initiative in developing an agile cloud automated solution.

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	18
Tutorial / Synchronous Support Activity	6
Laboratory / Practical Demonstration / Workshop	24
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Marco Brambilla, Jordi Cabot, and Manuel Wimmer, Model-Driven Software Engineering in Practice, Second Edition, Morgan & Claypool Publishers, 2017, ISBN-13 9781608458820.* Pramod J. Sadalage, and Martin Fowler, NoSQL distilled: a brief guide to the emerging world of polygot persistence, Addison-Wesley, 2012, ISBN-13 9780321826626.* Aaron Ploetz, Devram Kandhare, Sudarshan Kadambi, Xun Wu., Seven NoSQL Databases in a Week, 2018, Packt Publishing, ISBN-13 9781787288867.* Mikael Krief, Learning DevOps, 2nd edition, 2022, Packt Publishing*
(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	**Please select**
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	Graeme A. McRobbie
External Examiner	TBC
Accreditation Details	

Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
A class test (written) under strict examination conditions. The class test is intended to assess the student's understanding of the principles underpinning the technologies and frameworks studied in the module. The class test is worth 40% of the overall mark.
Assessment 2
A portfolio of practical work demonstrating the practical application of web development technologies and frameworks in producing a web-based solution to a problem. The portfolio of practical work is worth 60% of the overall mark.
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	☒	☒	☐	☐	☐	40	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of practical work	☒	☒	☒	☐	☐	60	0

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

Change Control

What	**When**	**Who**
