University of the West of Scotland

Module Descriptor

Session: 2023/24

Last modified: 12/04/2023 19:30:32
Status: Published

Title of Module: Agile Cloud Automation

Code: COMP11104	**SCQF Level: 11** (Scottish Credit and Qualifications Framework)	**Credit Points: 20**	**ECTS: 10** (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Graeme A. McRobbie		

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

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
				✓	

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered “blended” if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC

Online with mandatory face-to-face learning on Campus

HybridO
Online with optional face-to-face learning on Campus

Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

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)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓				✓		

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	✓	Term 2	✓	Term 3	✓

Learning Outcomes: (maximum of 5 statements)
On successful completion of this module the student will be able to: 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

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 11. Demonstrate a critical understanding of agile cloud automation.
Practice: Applied Knowledge and Understanding	SCQF Level 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 Level 11. Critically analyse requirements and design issues in developing a aglile cloud automated solution and interpret test results in evaluating its fitness for purpose.
Communication, ICT and Numeracy Skills	SCQF Level 11. Communicate a design for a agile cloud automated solution to a range of audiences.
Autonomy, Accountability and Working with others	SCQF Level 11. Exercise autonomy and initiative in developing an agile cloud automated solution

Pre-requisites:	Before undertaking this module the student should have undertaken the following:

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

* Indicates that module descriptor is not published.

Learning and Teaching	
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	18
Tutorial/Synchronous Support Activity	6
Laboratory/Practical Demonstration/Workshop	24
Independent Study	152
	200 Hours Total

****Indicative Resources: (eg. Core text, journals, internet access)**

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,Morgan & Claypool Publishers, 2012, 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.*

Alfred V. Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman., Compilers : principles, techniques, and tools, Pearson, second edition, 2006, ISBN-13 9780321491695, 9780321547989.*

(**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)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: Academic engagement procedure

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Applied and Business Computing
Moderator	tbc
External Examiner	tbc
Accreditation Details	pending
Changes/Version Number	1

Assessment: (also refer to Assessment Outcomes Grids below)
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.
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
(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 Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)	✓	✓		40	2

Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of practical work	✓	✓	✓	60	0
			Combined Total For All Components	100%	2 hours

Footnotes
A. Referred to within Assessment Section above
B. Identified in the Learning Outcome Section above

Note(s):
1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
   This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

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