

H9CDOS: Cloud DevOpsSec

Module Code:	H9CDOS
Long Title	Cloud DevOpsSec APPROVED
Title	Cloud DevOpsSec
Module Level:	LEVEL 9
EQF Level:	7
EHEA Level:	Second Cycle
Credits:	5
Module Coordinator:	Horacio Gonzalez-Velez
Module Author:	Vikas Sahni
Departments:	School of Computing
Specifications of the qualifications and experience required of staff	This module requires a lecturer holding a Master's degree or higher, in a discipline with a significant programming/mathematics component. e.g. Computer Science, Mathematics, Computational Physics. Lecturer: Mr Vikas Sahni
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
#	Learning Outcome Description
LO1	Critically analyse different techniques to perform code analysis, plan and implement static code analysis.
LO2	Develop and implement a plan for provisioning and configuration of software applications through CI/CD.
LO3	Critically evaluate and implement methodologies for secure application development and secure execution in production.
Dependencies	
Module Recommendations	
No recommendations listed	
Co-requisite Modules	
No Co-requisite modules listed	
Entry requirements	A cognate level 8 degree.

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Module Content & Assessment			
Indicative Content			
Introduction The Business Value of DevOps, the importance of integrating security			
Static Code Analysis What is static and dynamic analysis, the importance of static analysis, when is static analysis performed, how do the tools work			
Provisioning What is provisioning, what is cloud provisioning, infrastructure as code, open source and proprietary tools			
Configuring Configuring on-premises, cloud and hybrid resources, configuration management			
Continuous Integration The importance of CI, check-out, check-in, branching, automation of the build process			
Continuous Delivery The manual process, Visibility, Feedback and Deployment			
Load Testing Positive and Negative Testing, Load Testing, Stress Testing, Concurrent users, response time			
Build and Release Automation Automating Compiling, Packaging, Testing and Deployment. Rollback.			
Monitoring Network, Infrastructure, Platform, and Application monitoring			
Security CIA, Threat Modelling, OWASP			
DevOpsSec Process assessment Tools and templates			
Review Best Practices and Wrap up			
Assessment Breakdown			
Coursework	100.00%		
Assessments			
Full Time			
Coursework			
Assessment Type:	Project	% of total:	60
Assessment Date:	n/a	Outcome addressed:	1,2,3
Non-Marked:	No		
Assessment Description: Build, deploy, monitor and update a web application by setting up a full lifecycle CI/CD pipeline. To be assessed for functionality at Stage 1, and for the DevOps process at Stage 2.			
End of Module Assessment			
Assessment Type:	Terminal Exam	% of total:	40
Assessment Date:	End-of-Semester	Outcome addressed:	1,2,3
Non-Marked:	No		
Assessment Description: n/a			
No Workplace Assessment			
Reassessment Requirement			
Repeat examination <i>Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.</i>			
Reassessment Description This module is reassessed solely on the basis of re-submitted coursework.			

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Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Classroom & Demonstrations (hours)	24	Every Week	24.00
Tutorial	Other hours (Practical/Tutorial)	24	Every Week	24.00
Independent Learning	Independent learning (hours)	77	Every Week	77.00
Total Weekly Contact Hours				48.00

Module Resources	
<i>Recommended Book Resources</i>	
Gerardus Blokdik. (2019), Devopssec a Complete Guide - 2019 Edition, 5starcooks, p.312, [ISBN: 978-0655541059]. DevOpsSec A Clear and Concise Reference by Gerardus Blokdik Apr., (2018), ASIN: B07CVS6SH6.	
<i>Supplementary Book Resources</i>	
Emily Freeman. (2019), DevOps For Dummies, 1st. 23, John Wiley & Sons, p.320, [ISBN: 978-1119552222].	
<i>This module does not have any article/paper resources</i>	
<i>This module does not have any other resources</i>	
Discussion Note:	