

SWRE C7004: Software Testing

Module Details	
Module Code:	SWRE C7004
Full Title:	Software Testing APPROVED
Valid From::	Semester 1 - 2019/20 (June 2019)
Language of Instruction:	English
Duration:	1 Semester
Credits::	5
Module Owner::	Gerry Coleman
Departments:	Unknown
Module Description:	Students completing this module will be able to apply effective testing techniques within a range of software development methodologies. Students will learn key business skills such as working on their own initiative and, as testers, the ability to communicate testing information to a wide audience, including team members, managers, end-users and sponsors/customers.

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	Module Learning Outcome Description
MLO1	Explain the importance of software testing within software development projects.
MLO2	Compare and contrast debugging activities with effective software testing
MLO3	Create and apply unit testing using an automated test framework
MLO4	Apply coverage tools to determine the effectiveness of test cases
MLO5	Create functional tests using specification-based techniques
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	

Module Indicative Content	
Overview of Software Testing What is testing? Testing types and levels	
Testing within software lifecycles Waterfall model and phases; Agile development and testing approaches	
Testing Vs Debugging Differences between testing and debugging; Uncovering defects Vs removing defects; Cost of testing and cost of debugging; preventive testing	
Unit testing Testing individual units; automated unit test frameworks; Test-first development	
Code coverage Using coverage tools to measure the effectiveness of unit tests; Statement and decision coverage	
Functional testing Applying specification-based (black-box) techniques to applications; Use of equivalence partitions and boundary value analysis to maximise effectiveness and reduce test volume	
Module Assessment	
Assessment Breakdown	%
Course Work	50.00%
Final Examination	50.00%
Module Special Regulation	

Assessments

Full Time On Campus			
Course Work			
Assessment Type	Short Answer Questions	% of Total Mark	10
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 5	Learning Outcome	1,3
Duration in minutes	0		
Assessment Description In-class exercise and quiz to solidify early learning			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 8	Learning Outcome	3,4
Duration in minutes	0		
Assessment Description Students will be required to create a series of unit tests, and determine coverage levels, for a provided application			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 10	Learning Outcome	1,2,5
Duration in minutes	0		
Assessment Description Each student will take a multiple choice assessment to determine their knowledge of testing and testing techniques			
No Project			
No Practical			
Final Examination			
Assessment Type	Formal Exam	% of Total Mark	50
Marks Out Of	0	Pass Mark	0
Timing	End-of-Semester	Learning Outcome	1,2,3,4,5
Duration in minutes	120		
Assessment Description End-of-Semester Final Examination (Closed book)			

Part Time On Campus			
Course Work			
Assessment Type	Short Answer Questions	% of Total Mark	10
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 5	Learning Outcome	1,3
Duration in minutes	0		
Assessment Description In-class exercise and quiz to solidify early learning			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 8	Learning Outcome	3,4
Duration in minutes	0		
Assessment Description Students will be required to create a series of unit tests, and determine coverage levels, for a provided application			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	S1 Week 10	Learning Outcome	1,2,5
Duration in minutes	0		
Assessment Description Each student will take a multiple choice assessment to determine their knowledge of testing and testing techniques			
No Project			
No Practical			
Final Examination			

Assessment Type	Formal Exam	% of Total Mark	50
Marks Out Of	0	Pass Mark	0
Timing	End-of-Semester	Learning Outcome	1,2,3,4,5
Duration in minutes	120		
Assessment Description End-of-Semester Final Examination (Closed book)			
Reassessment Requirement			
A repeat examination 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.			

Module Workload

Workload: Full Time On Campus					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Deliver theory, principles and paradigms.	Every Week	1.00	1
Practical	Contact	There will be three timetabled laboratory classes per week. In these lecture/practical classes, the delivery of new material will be integrated with the practical implementation of that material.	Every Week	3.00	3
Directed Reading	Non Contact	Reading of lecturer-recommended information sources.	Every Week	1.00	1
Independent Study	Non Contact	Independent practical work	Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	4.00
Workload: Part Time On Campus					
Workload Type	Contact Type	Workload Description	Frequency	Average Weekly Learner Workload	Hours
Lecture	Contact	Deliver theory, principles and paradigms	Every Week	1.00	1
Practical	Contact	There will be three timetabled laboratory classes per week. In these lecture/practical classes, the delivery of new material will be integrated with the practical implementation of that material.	Every Week	3.00	3
Directed Reading	Non Contact	Reading of lecturer-recommended information sources	Every Week	1.00	1
Independent Study	Non Contact	Independent practical work	Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	4.00

Module Resources

Recommended Book Resources

Brian Hambling, Angelina Samaroo and Geoff Thompson. (2015), Software Testing: An ISTQB-BCS Certified Tester Foundation Guide, 3rd. BCS, [ISBN: 1780172990].

Supplementary Book Resources

Rex Black, Gerry Coleman, Marie Walsh et al.. (2017), Agile Testing Foundations: An ISTQB Foundation Level Agile Tester guide, 1st. BCS, [ISBN: 1780173369].

This module does not have any article/paper resources

Other Resources

Website, www.softwaretestpro.com.

Website, www.stickyminds.com.