BSHC16_: Software Engineering

Module Code:	BSHC16_
Long Title	Software Engineering APPROVED
Title	Software Engineering
Module Level:	LEVEL 6
EQF Level:	5
EHEA Level:	Short Cycle
Credits:	5
Module Coordinator:	ANTHONY PAUL STYNES
Module Author:	Margarete Silva
Departments:	School of Computing
Specifications of the qualifications and experience required of staff	

Learning Outcomes	
On successful completion of this module the learner will be able to:	
#	**Learning Outcome Description**
LO1	Describe the theory, concepts and methods pertaining to Agile Software Development
LO2	Describe the theory, concepts and methods pertaining to the Unified Modelling Language (UML).
LO3	Create requirements using Use Case modelling concepts.
LO4	Employ tools and techniques for Object Oriented Software Engineering,
LO5	Demonstrate an ability to adapt and solve problems in software development activities from specification to testing.

Dependencies
Module Recommendations
No recommendations listed
Co-requisite Modules
No Co-requisite modules listed

Entry requirements	

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Module Content & Assessment

Indicative Content
Software Engineering (10%) Principles of Software Engineering Software Process
Agile Development (20%) Agility Agile Process Extreme Programming Agile Process Models such as SCRUM, Crystal and so on
Use case modelling (10%) Actors Use Cases Anatomy of use cases Advanced Use Case Concepts
Class Diagrams (15%) Conceptual class diagram Problem domain concepts Associations Multiplicity Roles Generalization Constraints Navigability Recursive associations Qualified associations Association classes Aggregation Dependency Package
Analysis Phase (10%) Case Study such as Point of Sale Glossary System Sequence Diagrams Contracts Interaction diagrams
Communication Diagrams (10%) Guidelines Classes and instances Links Messages Return types Iterations Creation of instance Message number sequencing Conditional messages Collections Class messages
Design Phase (10%) Responsibilities Expert Pattern Creator Pattern Controller Pattern Design class diagrams Three tier Architectures Multi-tiered Architectures Model view separation pattern Mapping to code
Testing (15%) Software testing strategies such as System test, Integration test and unit test Software Testing Techniques Black box and White box testing Basis path testing Cyclomatic complexity

Assessment Breakdown	%
Coursework	100.00%

Assessments

Full Time

Coursework

Assessment Type:	Project	**% of total:**	60
Assessment Date:	n/a	**Outcome addressed:**	2,3,4,5
Non-Marked:	No		
Assessment Description:	n/a		

Assessment Type:	Assignment	**% of total:**	40
Assessment Date:	n/a	**Outcome addressed:**	1
Non-Marked:	No		
Assessment Description:	n/a		

No End of Module Assessment

No Workplace Assessment

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Module Workload

Module Target Workload Hours 0 Hours

Workload: Full Time

Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	No Description	2	Every Week	2.00
Tutorial	No Description	1	Every Week	1.00
			Total Weekly Contact Hours	3.00

Workload: Part Time

Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	No Description	2	Every Week	2.00
Tutorial	No Description	1	Every Week	1.00
			Total Weekly Contact Hours	3.00

Module Resources

Recommended Book Resources

Eric Baude, Michael Bernstein. (2011), Software Engineering Modern Approaches, 2nd edition. Wiley..

Roger S. Pressman,. (2010), Software Engineering: A practioners approach., 7th Edition. McGraw and Hill..

Alan Dennis, Barbara Haley Wixom, David Tegarden. (2009), Systems Analysis and Design with UML, International Student Version, 3rd Edition. Wiley.

Shore, J., and Warden, S. (2007), The Art of Agile Development, 1st. O'Reilly Media, [ISBN: 978-059652767].

Supplementary Book Resources

Axel van Lamsweerde. (2009),), Requirements Engineering: From System Goals to UML Models to Software Specifications,, Wiley.

Dragan Milicev. (2009),), Model-Driven Development with Executable UML,, Wiley.

Pilone, D., Pitman, N.,. (2005), UML 2.0 in a Nutshell, 2nd ed. O'Reilly Media Inc..

Eriksson, H.E., Penker, M., Lyons, B., and Fado, D.,. (2003), UML 2 Toolkit,, Wiley.

Fowler, M. (2003), UML Distilled, Addison-Wesley.

This module does not have any article/paper resources

Other Resources

[Web Site], IBM Resource Centre for UML.
http://www-01.ibm.com/software/rational/ uml/

[Web Site], OMG specifications for UML.
http://www.omg.org/spec/UML/

Discussion Note:	Approved to allow for review and modifications required for SoC Programmatic Review Cycle 2019/20