MULTIMEDIA UNIVERSITY®

SUMMARY OF INFORMATION ON EACH COURSE

1.	Name of Course	Software Engineering Fundamentals
2.	Course Code	TSE2101
3.	Status of Course [Applies to (cohort)]	Core
4.	MQF Level/Stage Note : Certificate – MQF Level 3 Diploma – MQF Level 4 Bachelor – MQF Level 6 Masters – MQF Level 7 Doctoral – MQF Level 8	Bachelor - MQF Level 6
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Previous: June 2014 Current: June 2016
6.	Pre-Requisite	TCP1101 Programming Fundamentals
7.	Name(s) of academic/teaching staff	Nur Azyyati binti Ahmad Nor'ain binti Mohd Yusoff
8.	Semester and Year offered	Trimester 1 (Gamma)
9.	Objective of the course in the programme : To introduce a formal approach to the state-of-art techniques in software design and development and provide means for students to apply the techniques using various tools.	
10.	Justification for including the course in the programme : This subject introduces the student to the systematic process of developing a software. The student would learn about the different phases in the development of software, identify with the main issues in managing a software project and determine the quality of a software product.	

11.	Course Learning Outcomes :	Domain	Level
	LO1. Identify software engineering paradigm/model to solve the problems based on domain problems correctly.	Cognitive	1
	LO2. Apply software project management, software engineering, software quality assurance and software configuration management processes during development of software.	Cognitive	3
	LO3. Produce good documentation and specifications in software engineering.	Cognitive	3

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	LO4. Demonstrate the use of notation and techniques in performing software requirement analysis, design, coding, testing and maintenance phases.	Cognitive	3

12.	Mapping of Learning Outcomes to Programme Outcomes :								
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
	LO1		X	X						
	LO2	X	X	X		X				
	LO3	X	X							
	LO4		X	X						

13.	Assessment Methods and Types :		
	Method and Type	Description/Details	Percentage
	Assignment	Practical work	40%
	Test	Written	10%
	Final Exam	Written	50%

14.	Mapping of assessment components to learning outcomes (LOs)				
	Assessment Components	LO1	LO2	LO3	LO4	
	Assignment (40%)	X	X	X	X	
	Test (10%)	X		X	X	
	Final Exam (50%)	X		X	X	

15.	Details of Course		
	Topics		Mode of Delivery (eg : Lecture, Tutorial, Workshop, Seminar, etc.) Indicate allocation of SLT (lecture, tutorial, lab) for each subtopic
	1. Introduction Defining Software. Definition of Software Engineering. Characteristics of A Software Engineer. Software Engineering Domains. Software Categories: WebApps, Mobile, Cloud, Product-Line Software.	**Lecture Hours** 2	**Tutorial Hours** 2

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2. **Software Process** Generic Process Model. Prescriptive, Incremental, and Evolutionary Process Models. The Unified Process. Agile Development.	4	4
3. **Software Requirements Analysis** Requirements Engineering. Eliciting Requirements. Requirements Modelling: Scenario-based, Class-based, and Behavioural Models. Requirements modelling for Web and Mobile Applications.	6	6
4. **Software Design** Design Concepts. Design Model: Data Design, Architecture Design, Interface Design, Component-Level Design, Deployment-Level Design. Design Patterns and Frameworks. Designing Web and Mobile Applications	6	6
5. **Software Quality & Testing** Quality Concepts. Software Quality Factors. Quality Metrics. Software Quality Assurance. Quality Standards – ISO 9000 & Capability Maturity Model Integration (CMMI). Software Testing Strategies. White Box and Black Box Testing. Designing Test Cases. Debugging.	5	5
6. **Software Project Management** Project Management Concepts. Metrics for Software Projects. Project Estimation Models. Project Planning, Scheduling and Control.	3	3
7. **Software Maintenance & Control** Software Configuration Management. Software Supportability. Software Reengineering and Reverse Engineering.	2	2

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		28	28
	Total Student Learning Time (SLT)	Face to Face	Independent Learning
	Lecture	28	28
	Tutorials	28	28
	Laboratory/Practical		
	Presentation		
	Assignment	-	21
	Quiz		
	Mid Term Test	1	4
	Final Exam	2	20
	Sub Total	59	101
	Total SLT	160	
16.	Credit Value	4 (160 / 40 = 4.0)	
17.	Reading Materials :		
	Textbooks		
	Roger S Pressman & Bruce R. Maxim, Software Engineering: A Practitioner's Approach, 8th Edition. McGraw Hill, 2015		
	Reference Material (including 'Statutes' for Law)		
	Ian Sommerville, Software Engineering, 10th Edition, Pearson, 2015		

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Appendix (to be compiled when submitting the complete syllabus for the programme) :
1. Mission and Vision of the University and Faculty
2. Programme Objectives or Programme Educational Objectives
3. Programme Outcomes (POs)
4. Mapping of POs to the 8 MQF domain
5. Summary of the Bloom's Taxonomy's Domain Coverage in all the Los in the format below :

Subject	Learning Outcomes (please state the learning 0utcomes)	Bloom's Taxonomy Domain		
		Affective	Cognitive	Psychomotor
TSE2101	Learning Outcome 1		1	
	Learning Outcome 2		3	
	Learning Outcome 3		3	
	Learning Outcome 4		3	

6. Summary of LO to PO measurement
7. Measurement and Tabulation of result for LO achievement
8. Measurement Tabulation of result for PO achievement