

SUMMARY OF INFORMATION ON EACH COURSE

1.	Name of Course	Software Engineering Fundamentals	
2.	Course Code	TSE2231	
3.	Status of Course [Applies to (cohort)]	Specialisation Core for B.IT (Hons) Information Technology Management	
4.	MQF Level/Stage Note : <i>Certificate – MQF Level 3</i> <i>Diploma – MQF Level 4</i> <i>Bachelor – MQF Level 6</i> <i>Masters – MQF Level 7</i> <i>Doctoral – MQF Level 8</i>	Bachelor – MQF Level 6	
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Date of previous version : June 2014	
6.	Pre-Requisite	TCP1211 Computer Programming	
7.	Name(s) of academic/teaching staff	KalaiarasiSMA Dr Lee Chin Poo	
8.	Semester and Year offered	Trimester 2, Year 2	
9.	Objective of the course in the programme : To introduce a formal approach to the state-of-the-art techniques in software design and development and provide a means for students to apply the techniques using various tools.		
10.	Justification for including the course in the programme : The specification, development, management and evolution of software systems make up the discipline of software engineering. It is a discipline where software engineers use methods and theory from computer science and apply cost effectively to solve difficult problems. This course will provide students with introductory concepts in software engineering as well as apply effective techniques in designing and developing software.		
11.	Course Learning Outcomes :	Domain	Level
	LO1 Identify software engineering paradigm/model to solve the problems based on domain problems correctly.	Cognitive	Level 1
	LO2 Apply software project management, software engineering, software quality assurance and software configuration management processes during developing the software.	Cognitive	Level 3
	LO3 Produce good documentations and specifications in software engineering.	Cognitive	Level 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	Level 3
12.	Mapping of Learning Outcomes to Programme Outcomes :											
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		
	LO1	X	X	X								
	LO2	X	X	X								
	LO3		X	X								
	LO4		X			X						
13.	Assessment Methods and Types :											
	Method and Type	Description/Details							Percentage			
	1. Final Exam								60%			
	2. Test								20%			
	3. Assignment	Report & Presentation							20%			
14.	Mapping of assessment components to learning outcomes (LOs)											
	Assessment Components	%	LO1	LO2	LO3	LO4						
	Final Exam	60	75	60	60	100						
	Test	20	25	20	20							
	Assignment	20		20	20							
15.	Details of Course											
	Topics							Mode of Delivery				
	Introduction Role of software engineering & engineer. Software Engineering Paradigms.							2		1		
	Process Models Software Engineering & Models. Software engineering principles. Agile Development							4		4		

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Project Management Metrics. Estimation Model. Decomposition Technique & planning tools. Software Project Planning & Control: Gantt Chart, PERT/CPM & Others, Work Breakdown Structure (WBS).		4	4
Requirement Analysis & Design Principles. Prototyping. Software Requirement Analysis Requirement Specification Principles that Guide Practice Understanding Requirements Data Flow Oriented. Transform Flow. Transaction Analysis. Requirements Modeling Design		6	6
Analysis Modeling & Software Specifications Classification of specification (Modeling) Operational specifications: data flow diagram, state transition diagrams. Description specification: ER diagram		4	4
Software Quality & Testing Verification and validation. Test cases & design. Approaches to verification & testing. Debugging. Factors affecting quality. Review Techniques. Quality Metrics. Reliability & Performance. Quality Standards - ISO 9000		4	2
Software Maintenance & Control Software Configuration Management. Monitoring & Controlling Projects Problems Computer Aided Software Engineering CASE tools - analysis tools, project management tools, configuration		3	1
		27	22
Total Student Learning Time (SLT)	Face to Face / Guided Learning	Independent Learning	
Lecture	27	27	
Tutorials	-	-	
Laboratory/Practical	22	11	
Presentation	-	12	
Assignment	-		
Mid Term Test	1	3	
Final Exam	2	15	
Sub Total	52	68	

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	Total SLT	120
16.	Credit Value	3
17.	Reading Materials :	
	Textbooks	
	1. Roger S. Pressman. (2010). Software Engineering: A Practitioner's Approach (8th ed.). McGraw Hill.	
	Reference Material (including 'Statutes' for Law)	
	1. Shari Lawrence Pfleeger, Joanne M. Atlee. (2006). Software Engineering: Theory and Practice (3rd ed.). Pearson.	
	2. Ian Sommerville. (2007). Software Engineering. (8th ed). Addison Wesley.	
	3. Sue A. Conger. (1994). The New Software Engineering. International Thomson.	

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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 Outcomes)	Bloom's Taxonomy Domain		
		Affective	Cognitive	Psychomotor
ABC1234	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			
DEF5678	Learning Outcome 1			
	Learning Outcome 2			
	Learning Outcome 3			
	Learning Outcome 4			

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