

**SUMMARY OF INFORMATION ON EACH COURSE**

1.	Name of Course	Problem Solving and Programming	
2.	Course Code	PPS0335	
3.	Status of Course [Applies to (cohort) ]	Core	
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>	Foundation	
5.	Version (State the date of the Senate approval – history of previous and current approval date)	Date of previous version :	April 2014
		Date of current version :	June 2015
6.	Pre-Requisite	Nil	
7.	Name(s) of academic/teaching staff	Faizuniza Mashhod, Fauziah Kamarulzaman, Khairol Nizat Lajis, Mawar Madiyah, Nurhayati Yusoff, Robiatun Adawiah Ahmad Kushairi	
8.	Semester and Year offered	Trimester 3	
9.	Objective of the course in the programme : To expose students with problem solving and programming skills to solve IT related problems using suitable tools.		
10.	Justification for including the course in the programme : To equip students with the ability to exhibit analytical and problem-solving skills to solve IT related problems.		
11.	Course Learning Outcomes :	Domain	Level
	LO1 Describe basic problem solving techniques in programming.	Cognitive	Level 1
	LO2 Construct simple computer programs based on problem solving techniques.	Cognitive	Level 3
	LO3 Demonstrate skills required in problem solving through programming.	Cognitive	Level 3
	LO4 Apply the processes and phases in problem solving.	Cognitive	Level 3

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12.	Mapping of Learning Outcomes to Programme Outcomes :									
	Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	
	LO1	X				X	X			
	LO2		X				X	X		
	LO3		X			X	X	X		
	LO4		X			X	X	X		
13.	Assessment Methods and Types :									
	Method and Type	Description/Details					Percentage			
	Class Discussion	Group discussions and presentations					10%			
	Assignment	Written and practical assignments					10%			
	Lab Test	Practical tests					10%			
	Project	Group project - written report and presentation					20%			
	Final Examination	Written examination					50%			
14.	Mapping of assessment components to learning outcomes (LOs) :									
	Assessment Components	LO1	LO2	LO3	LO4					
	Class Discussion	13		13						
	Assignment		50							
	Lab Test		50							
	Project	25		25	29					
	Final Examination	62		62	71					
15.	Details of Course :									
	Topics						Mode of Delivery			
							Lecture	Lab		
	<b>Introduction</b> Introduction to the concepts of problem solving in programming						2	1		
	<b>Problem Solving Concepts for the Computer</b> Introduction: Variables, data types, built-in functions, operators; Expressions and Equation						2	1		

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	<b>Program Development Cycle (PDLC)</b> Introduction phases in PDLC: Requirements analysis, design, implementation, testing, documentation; Introduction of the tools: IPO chart, algorithms, flowcharts, pseudocode	4	1
	<b>Introduction to Programming Structure</b> Designing modules and functions; The difference between local and global variable; Usage of parameters; Introduction to functions, string and array	2	1
	<b>Problem Solving with Sequential Logic Structure</b> Using sequential logic structure to develop solution to a problem; Using proper form for instructions in an algorithm, flowchart and pseudocode	4	1
	<b>Problem Solving with Decision</b> Using decision logic structure: If-else, straight-through logic, positive logic, negative logic, and case logic structure	4	1
	<b>Problem Solving with Loops</b> Using loop structure: While, do-While, for-next and recursion	4	1
	<b>Programming using Programming Language</b> Introduction to programming fundamentals; Data types, variables, operators; Program flow: If, if-then-else, for-next loop, do-loop, do-while, do-until, while, select case; User defined functions; Designing menus and toolbars	0	7
	<b>Total</b>	<b>22</b>	<b>14</b>
16.	<b>Total Student Learning Time (SLT)</b>	<b>Face to Face / Guided Learning</b>	<b>Independent Learning</b>
	Lecture	22	22
	Laboratory/Practical	14	14
	Class Activity	0	2
	Assignment	0	4
	Lab Test	2	6
	Project	2	10
	Final Exam	2	20
	Sub Total	42	78
	Total SLT	120	
17.	Credit Value	3	
	Reading Materials :		

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18.	Textbooks			
	1. Sprankle, M., & Hubbard, J. (2012). Problem solving and programming concepts (9th ed.). Harlow, Essex: Pearson Education.			
	Reference Material (including 'Statutes' for Law)			
	1. Backhouse, R. (2011). <i>Algorithmic problem solving</i> . John Wiley & Sons.			
	2. Hanly, J. R., & Koffman, E. B. (2013). <i>Problem solving and program design in C</i> . Pearson.			
	3. Savitch, W., & contributor, K. M. (2012). <i>Problem solving with C++</i> . Pearson Education LTD.			
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				