1	**Course Name:**	Introduction to Visual and Interactive Programming	**Version Number:**	VE1
	Course Code:	CT005-4-0	**Effective Date:**	01 Jan 2023
	Course Classification:	Major (Core)		
2	**Synopsis:**	Computational thinking is a skill to solve a problem logically by applying visual and interactive programming elements. Students will learn the essential skills required in designing and implementing software solutions regardless of platform, language, or application domain. This module will cover the following four elements: decomposition, pattern recognition, abstraction, and algorithm.		
3	**Name(s) of Academic Staff:**	**1** **Aziah Binti Abdollah**		
		2 Dr Masrina Akmal Binti Salleh		
		3		
4	**Semester and Year offered:**	**See Programme Specification** **(Module may be delivered on multiple programmes and therefore in different years/semesters)**		
5	**Credit Value:**	4		
6	**Pre-requisite/ co-requisite (if any):**			

7 **Course Learning Outcomes (CLO)**

CLO1	Describe the principles of Computational Thinking (C1, PLO1)
CLO2	Apply the elements of computational thinking to solve a problem (C3, PLO2)
CLO3	Use the visual interactive programming tools to develop an application. (A1, PLO6)

8 **Mapping of the Course Learning Outcomes to the Programme Learning Outcomes, Teaching Methods and Assessment Methods**

Course Learning Outcomes	**Programme Learning Outcomes (PLO)**											**Teaching Methods**	**Assessment Methods**
	Knowledge and Understanding	Cognitive Skills	Practical Skills	Interpersonal Skills	Communication Skills	Digital Skills	Numeracy Skills	Personal Skills					
	PLO 1	**PLO 2**	**PLO 3**	**PLO 4**	**PLO 5**	**PLO 6**	**PLO 7**	**PLO 8**					
CLO1	√											Lecture and Tutorial	Final Exam
CLO2		√										Tutorial	Project - Documentation
CLO3						√						Tutorial	Project - Implementation
Mapping with MQF Cluster of Learning Outcomes	C1												
		C2											
						C3D							

Indicate the primary causal link between the CLO and PLO by ticking 'v' in the appropriate box.

C1 = Knowledge & Understanding, C2 = Cognitive Skills, C3A = Practical Skills, C3B = Interpersonal Skills, C3C = Communication Skills, C3D = Digital Skills,

C3E = Numeracy Skills, C3F = Leadership, Autonomy & Responsibility, C4A = Personal Skills, C4B = Entrepreneurial Skills, C5 = Ethics & Professionalism

9 **Transferable Skills (if applicable)**

(Skills learned in the course of study which can be useful and utilized in other settings)

1	Cognitive skills
2	Digital Skills
3	

Open-ended response (if any)

4	

10 **Distribution of Student Learning Time (SLT)**
Note: This SLT calculation is designed for home grown programme only.

	Course Content Outline and Subtopics	CLO*	Learning and Teaching Activities**								Total SLT
			Face-to-Face (F2F)							NF2F Independent Learning (Asynchronous)	
			Physical				Online/ Technology-mediated (Synchronous)				
			L	T	P	O	L	T	P	O	
1	Introduction to Computers and Programming	1	2								2
2	Introduction to Computational Thinking and Problem Solving	1	2				1				4
3	Data and Variables	1	2								2
4	Boolean Expressions	1	2								4
5	Control Structure:Selection and Loop	1	4								8
6	List	1	3								6
7	Procedures & Functions	1	4				1				8
8	Object Oriented Programming	1	3								6
9	Computational Thinking Concepts and Application	2		2							4
10	Planning and Design	2		2							6
11	Develop Application Using Visual Programming Tool	3		1							1
12	Create Application Using Various Programming Concepts	3		4							7
13	Creating Application Using Object-Oriented Programming	3		4							7
14	Creating Application Using Functions & Procedures	3		4				1			8
15	Creating Application with Advanced Design	3		5				1			8
16											
17											
18											
19											
20											
										SUB-TOTAL SLT:	129

	Continous Assessement	%	Face-to-Face (F2F)		NF2F Independent Learning for Assessment (Asynchronous)	
			Physical	Online/ Technology-mediated (Synchronous)		
1	Project - Documentation	15			8	
2	Project -Implementation	35	0.5		12	
3						
4						
5						
					SUB-TOTAL SLT:	20.5

	Final Assessement	%	Face-to-Face (F2F)		NF2F Independent Learning for Assessment (Asynchronous)	
			Physical	Online/ Technology-mediated (Synchronous)		
1	Final Exam	50		1.5	9	
2						
3						
4						
5						
					SUB-TOTAL SLT:	10.5

	SLT for Assessment:	31
	GRAND TOTAL SLT:	160
A	% SLT for F2F Physical Component: *[Total F2F Physical /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100)]*	27.81
B	% SLT for Online & Independent Learning Component: *[(Total F2F Online + Total Independent Learning) /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]*	72.19
C	% SLT for All Practical Component: *[% F2F Physical Practical + % F2F Online Practical]*	
C1	% SLT for F2F Physical Practical Component *[Total F2F Physical Practical /(Total F2F Physical + Total F2F Online + Total Independent Learning) x 100)]*	
C2	*% SLT for F2F Online Practical Component* *[Total F2F Online Practical / (Total F2F Physical + Total F2F Online + Total Independent Learning) x 100]*	

Please tick (V) if this course is Industrial Training/ Clinical Placement/ Practicum using 50% of Effective Learning Time (ELT)

Note:

*** Indicate the CLO based on the CLO's numbering in Item 8**

**** For ODL programme: Courses with mandatory practical requiremnets imposed by the programme standards or any related standards can be exempted from complying to the minimum 80% ODL delivery rule in the SLT.**

11	**Identify special requirement or resources to deliver the course (e.g., software, nursery, computer lab, simulation room etc)**	Computer Lab and Snap! Tool.

12	**References (include required and further readings, and should be the most current)**	Essential References: Mailund, T. (2021). Introduction to Computational Thinking: Problem Solving, Algorithms, Data Structures, and More (1st ed.). Apress, ISBN-10: 1484270762 and ISBN-13: 978-1484270769. Sweigart, A. (2021). Scratch 3 programming playground: Learn to program by making Cool Games (2nd ed.). No Starch Press, ISBN-10 : 1718500211 and 978-1718500211 Other References: Tin Yu, C., & TomorrowSKILLS, H. (2020). Introduction to Block Based Programming: with Snap! (STEM Programming and Coding). HobbyPRESS TomorrowSKILLS. Mc Manus, S. (2019). Scratch Programming in easy steps (2nd ed.). In Easy Steps Limited, ISBN-10 : 1840788593 and ISBN-13 : 978-1840788594
13	**Other additional information (if applicable)**	
Note: Number of PLO indicated is purely for illustration purposes only and the number is subjected to the curriculum design.		