Curriculum Overview 2023/24: Term 1 **Year: 10**

Subject:	Topic: Systems Architecture						
	4 Sept 2023	**11 Sept 2023**	**18 Sept 2023**	**25 Sept 2023**	**2 Oct 2023**	**9 Oct 2023**	**16 Oct 2023**
Learning Question	Systems architecture: Architecture of the CPU Programming	Systems architecture: Architecture of the CPU Programming	Systems architecture: CPU performance Programming	Systems architecture: Embedded systems Programming	Memory and storage: Primary storage Programming	Memory and storage: Secondary storage Programming	Systems architecture and memory and storage recap Assessment Programming
Homework	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	
Key Vocabulary	*Registers* *Cache* *Random Access Memory (RAM)* *Read Only Memory (ROM)* *Central Processing Unit (CPU)* *Arithmetic Logic Unit (ALU)* *Control Unit (CU)* *Accumulator (ACC)*	*Registers* *Cache* *Random Access Memory (RAM)* *Read Only Memory (ROM)* *Central Processing Unit (CPU)* *Arithmetic Logic Unit (ALU)* *Control Unit (CU)* *Accumulator (ACC)*	*RAM, Cache* *Clock cycle* *Hertz* *Data transfer speed* *Read/Write speed*	*Dedicated* *Specific purpose* *Computer built into another device*	*RAM/ROM* *Virtual memory*	*Optical* *Magnetic* *Solid State* *Capacity* *Durability* *Robustness*	*All previous*
Absenteeism / Isolation /	*All resources and programming tutorials are*	*All resources and programming tutorials are*	*All resources and programming tutorials are*	*All resources and programming tutorials are*	*All resources and programming tutorials are*	*All resources and programming tutorials are*	*All resources and programming tutorials are*

Stretch & Challenge	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*	*located in Teams Files and within OneNote (Content Library / student section)*
Recommended reading	*All resources (reading materials) and tutorials are located in Teams Files and class OneNote.* *Additional reading is posted in Teams general channel.* Craig 'n' Dave videos for SLR 1.1 Craig 'n' Dave videos for SLR 1.2						
Knowledge Organiser Link	*Knowledge Organisers are located in the Content Library of the class OneNote Notebook*						

Curriculum Overview 2023/24: Term 1 Year: 11

Subject:	**Topic: Algorithms**						
	4 Sept 2023	**11 Sept 2023**	**18 Sept 2023**	**25 Sept 2023**	**2 Oct 2023**	**9 Oct 2023**	**16 Oct 2023**
Learning Question	Abstraction Decomposition Programming	Algorithmic thinking Inputs, processes and outputs Programming	Structure diagrams How to produce algorithms using pseudocode and flowcharts Programming	Identifying errors and suggesting fixes Trace tables Programming	Binary search Linear search Bubble search Programming	Merge sort Insertion sort Programming	Assessment Programming
Homework	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	*Smart Revise*	

Key Vocabulary	*algorithm* *abstraction* *decomposition* *Lists* *Iteration*	*algorithm* *abstraction* *decomposition* *Lists* *Iteration*	*Structured diagram* *Pseudocode* *Flow diagram* *Sequence* *Selection*	*Trace tables* *Sequence* *Selection* *Iteration*	*Algorithm* *Search* *Sort*	*Algorithm* *Search* *Sort*	
Absenteeism / Isolation / Stretch & Challenge	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	
Recommended reading	*All resources (reading materials) and tutorials are located in Teams Files and class OneNote.* *Additional reading is posted in Teams general channel.* Craig 'n' Dave videos for SLR 2.1						
Knowledge Organiser Link	*Knowledge Organisers are located in the Content Library of the class OneNote Notebook*						

Curriculum Overview 2023/24: Term 1 Year: 12/13

Subject:	**Topic: Algorithms and Programming**						
	4 Sept 2023	**11 Sept 2023**	**18 Sept 2023**	**25 Sept 2023**	**2 Oct 2023**	**9 Oct 2023**	**16 Oct 2023**
Learning Question	The nature of abstraction The need for abstraction The differences between an abstraction and reality Devise an abstract model for a variety of situations Programming Project	Identify inputs and outputs in a given situation Determine the preconditions for devising a solution to a problem The nature, benefits and drawbacks of caching The need for reusable program components Programming Project	Identify the components of a problem Identify the components of a solution to a problem Determine the order of the steps needed to solve a problem Identify sub-procedures necessary to solve a problem Programming Project	Identify the points in a solution where a decision needs to be made Determine the logical conditions that affect the outcome of a decision Determine how decisions affect the flow of a program Programming Project	Determine the parts of a problem that can be tackled at the same time Outline the benefits and trade-offs that might result from concurrent processing in a particular situation Programming Project	Programming constructs: sequence, iteration, branching Recursion, its use and how it compares to an iterative approach Global and local variables Modularity, functions and procedures, and parameter passing by value and reference	Use of object-oriented techniques Programming Project

						Use of an IDE to develop or debug a program Programming Project	
Homework	*Project* *Smart Revise*	*Project* *Smart Revise*	*Project* *Smart Revise*	*Project* *Smart Revise*	*Project* *Smart Revise*	*Project* *Smart Revise*	
Key Vocabulary	*algorithm* *abstraction* *decomposition*	*Precondition*	*algorithm* *abstraction* *decomposition*	*Flow diagram* *Pseudocode* *Structure diagram* *abstraction* *decomposition*	*Big O Notation* *Concurrency* *Parallel*	*Object Oriented Programming* *Polymorphism* *Instantiation* *Inheritance* *recursion*	*Object Oriented Programming* *Polymorphism* *Instantiation* *Inheritance*
Absenteeism / Isolation / Stretch & Challenge	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	*All resources and programming tutorials are located in Teams Files and within OneNote (Content Library / student section)*	
Recommended reading	*All resources (reading materials) and tutorials are located in Teams Files and class OneNote.* *Additional reading is posted in Teams general channel.* Craig 'n' Dave videos for SLR 18 Craig 'n' Dave videos for SLR 20 Craig 'n' Dave videos for SLR 21 Craig 'n' Dave videos for SLR 22 Craig 'n' Dave videos for SLR 23						
Knowledge Organiser Link	*Knowledge Organisers are located in the Content Library of the class OneNote Notebook*						