

LVI - A1		Term	Michaelmas 1	Michaelmas 2	Lent 1	Lent 2	Trinity 1	Trinity 2
			Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage
	Unit Title		1.1 The characteristics of contemporary processors, input, output and storage devices	1.2.Systems Software and software development	1.3 Exchanging Data	1.3 Exchanging Data	1.4 Data types, data structures and algorithms	1.4 Data types, data structures and algorithms
			The structure and function of a processor including the difference between the Von Neuman and Harvard architecture. Different types of processor including RISC and CISC processor and the difference the use of and the functioning of CPUs and GPUs. Input, output, memory, and, including RAM, ROM and virtual storage, and different types of storage,	Systems software including memory management, interrupts, different types of operating system, device drivers and virtual machines. Applications generation including applications, utility software, stages of compilation and linkers and loaders., Software development and types of programming lanaguage including assembly language, procedural language and OOP.	Compression, Encryption and Hashing. Relational databases, normalisation, referential integrity and transaction processing and using SQL to query databases.	Computer Networks focussing on the layers and protocols, structure of the internet, network security, network hardware and different types of network models.	How data is represented in binary, in negative numbers in binary and in decimal numbers in binary. Binary addition, subtraction and shifts.Using AND, OR and XOR. Converting binary to hexadecimal and stored within different structures. Different algorithms that can be applied to these structures.	How data is represented in binary, in negative numbers in binary and in decimal numbers in binary. Binary addition, subtraction and shifts.Using AND, OR and XOR. Converting binary to hexadecimal and stored within different structures. Different algorithms that can be applied to these structures.
			2.1 Elements of computational thinking	2.1 Elements of computational thinking	2.2 Problem solving and programming	2.3 Algorithms	2.3 Algorithms	3 Non-Examined Assessment - Coursework
			Understand what is meant by computational thinking. Considering thinking abstractly, thinking ahead, thinking procedurally. Pupils will be set programming tasks to support the understanding of these concepts.	Understand what is meant by computational thinking. Considering thinking logically and thinking concurrently. Pupils will be set programming tasks to support the understanding of these concepts.	How computers can be used to solve problems and programs can be written to solve them. Using computational methods including: problem recognitions, problem decompositon, use of divide and conquer, use of abstraction, and practical methods that include these methods.	Looking at selecting the correct algorithm to solve a problem. Determining the efficiency and coplexity of a given algorithm. Using data structures, such as stacks, queues, linked ists, and different tree traversals.	Use of standard algorithms: bubble sort, insertion sort, merge sort, quick sort, path finding algorithms, binary and linear search	Analysis & Design Considering similar solutions, why the chosen problem is ammenable to a computational solution and the requirements and criteria for success for the solution.
				2.2 Problem solving and programming				
				How computers can be used to solve problems and programs can be written to solve them. Using programming techniques.				
	RAT TESTS			RAT 1	MINI RAT A	MINI RAT B		

Upper Sixth		Term	Michaelmas 1	Michaelmas 2	Lent 1	Lent 2	Trinity 1	Trinity 2
		Curriculum/Syllabus Coverage		Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage	Curriculum/Syllabus Coverage		
	Unit Title	1.4 Data types, data structures and algorithms		Revision	Revision	Revision		
		Data Structures including arrays, records, lists, tuples, linked-lists, graphs, stacks, queue, trees and hash tables and how to create, traverse, add and remove data.Using Boolean Algebra to define problems, Simplifying logic statements, using logic gate diagrams and truth tables. Using Karnaugh maps. Follow De Morgan's Law. Looking at the logic associated with D type flip flops, half and full adders.		Paper 1 Content 1.1 - 1.3 The characteristics of contemporary processors, input, output and storage , Systems Software and software development devices, and Exchanging Data. Paper 1 Content 1.4- 1.5 Data types, data structures and algorithms and Legal, moral, cultural and ethical issues.	Paper 1 Content 1.1- 1.3 The characteristics of contemporary processors, input, output and storage , Systems Software and software development devices, and Exchanging Data	Paper 1 Content 1.4- 1.5 Data types, data structures and algorithms and Legal, moral, cultural and ethical issues.		
		1.5 Legal, moral, cultural and ethical issues The individual moral, social, ethical and cultural opprotunities and risks of digital technology. Legislation surrounding the use of computers and ethical issues tha tcan or may in the future arise form the use of computers. The laws include The Data Protection Act, The Computer Misuse Act, The Copyright Designs and Patents Act and the Regulation of Investigatory Powers Act.		Paper 2 Content 2.1-2.2 Elements of computational thinking and Problem solving and programming. Paper 2 Content 2.3 Algorithms using data structures.	Paper 2 Content 2.3 Algorithms using standard algorithms.	Paper 2 Content 2.3 Algorithms using data structures and standard algorithms		
		3 Non-Examined Assessment - Coursework		3 Non-Examined Assessment - Coursework	3 Non-Examined Assessment - Coursework			
		Design & Development Plan the solution to the problem through diagrams, algorithms and outlining the inputs, processes and outputs that the solution requires.		Development Evidence coding the solution using an iterative development cycle and monitoring what requirements have been achieved.	Evaluation Evaluating the project against the requirements and criteria for success. As well as overall looking at the successes, potential developments of the project.			
	Trial Exams				Trial Exams			