A Level Computer Science Overview (2021-22)

Subject: GCE Computer Science

Year 12						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 1
Learning	**Component 1** Structure & function of the CPU Types of Processor Input, Output, Storage **Component 2** Thinking abstractly Thinking ahead Thinking procedurally Thinking logically **Component 3** Programming Fundamentals	**Component 1** Operating Systems Application generation Assembly Language programming **Component 2** Programming constructs Programming techniques Global & local variables Functions & procedures Parameter passing IDEs **Component 3** Programming Fundamentals	**Component 1** Databases Networks Web Technologies **Component 2** Software development methodologies Test strategies **Component 3** Analysis – Project completion	**Component 1** Data Types Data Structures Boolean Algebra **Component 2** Search & sort algorithms Queues and stacks **Component 3** Analysis – Project completion	**Component 1** Legal, Ethical & Environmental issues **Component 2** AS revision **Component 3** Design – Project completion	**Component 1** AS Revision **Component 2** AS revision **Component 3** Design – Project completion
Assessment	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.

A Level Computer Science Overview (2021-22)

Year 13						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 1
Learning	**Component 1** CPU Performance & Pipelining GPUs Stages of compilation **Component 2** Revision of 2.1 AS content Thinking concurrently **Component 3** Development – Project completion	**Component 1** Linkers, Loaders & Libraries Development Methodologies Programming Paradigms **Component 2** Use of object-oriented programming techniques Problem recognition and decomposition Use of divide and conquer **Component 3** Development – Project completion	**Component 1** Modes of addressing OOP Languages Encryption & Hashing Normalisation SQL Transaction Processing **Component 2** Back tracking and data mining Heuristics and performance modelling Pipelining and visualisation Big O notation **Component 3** Testing – Project completion	**Component 1** Search Engine Indexing Page Rank Algorithm Floating point binary notation De Morgans Law Adder Circuits Flip Flop Circuits **Component 2** Algorithms for linked lists, depth-first and breadth-first traversal of trees. Dijkstra's shortest path. A* pathfinding algorithm. **Component 3** Evaluation – Project completion	**Component 1** A2 revision **Component 2** A2 revision **Component 3** Proof reading and final amendments – Project completion	
Assessment	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	MCQ Knowledge Assessment. Half-termly Checkpoint Assessment.	