Computer Science A Level Curriculum

Year 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content: What will students know	Fundamental of computer systems and architecture Fundamentals of data representation Fundamentals of Programming	Fundamental of computer systems and architecture Fundamentals of data representation Fundamentals of programming Databases	Fundamentals Data structure Functional programming Big Data	Fundamental of algorithms Computer systems	Communication and networking Theory of computation	Theory of computation NEA
Skills: What will students be able to do	CPU, Hardware, assembly language, machine code,secondary storage Binary conversion/fixed/floating point/Images/sound/Compression/encryption Data types Programming concepts	Programming concepts Using Local and global variables subroutines/reading and writing to files/using the library Object originated programming What databases are, how they are used/SQL	Arrays, records and files. FUnctions - list, writing functions, first class object What is big data and how this is used.	Graph Traversal Tree Reverse Polish notation Searching and sorting algorithms Dijkstra shortest path algorithm Hardware and software Booleean algebra and Operating system	Communication methods Networking The internet Protocols IP Client server model	Abstraction, decomposition, Finite state machine, Turing Machine/regular expressions, Big O notation/Backus naur form
Other: Literacy/ Numeracy/ Ethos	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy

Assessment:	Written assessment	Written assessment	Written assessment	Written assessment	Written assessment	End of year Mock

Year 13	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content: What will students know	NEA Systematic approach to Problem solving	NEA Consequences of computing Databases	Unseen programming task NEA	NEA Exam Technique	Exam Technique	
Skills: What will students be able to do	Design a solution to a problem (Analysis, design, implementation and evaluation)	Moral, legal issues surrounding computer issues	Use a range of material to prepare and practice unseen programming	Review topics and practice exam technique on long and short questions,	Review topics and practice exam technique on long and short questions,	
Other: Literacy/ Numeracy/ Ethos	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	Literacy & Numeracy	
Assessment:	Written assessment	Written assessment	Written assessment	Written assessment	Unseen Programming task Summer exam	