

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic (s)	Data Representation Revisit Computer Systems Revisit	Programming Revisiting Cyber Security Revisiting	Algorithms Revisiting Impact of Technology Revisiting	Exam Revision Specific to Student needs		
Topic Objectives	<p>-Explain how numbers, text, images, and sound are represented using binary digits. Perform operations on binary digits. Convert between units of measurement.</p> <p>-Describe the role of the CPU.</p> <p>-Explain the processes of the fetch-decode-execute cycle. Determine the role of main memory and secondary storage.</p> <p>- Construct truth tables for three input logic circuits.</p> <p>- Write a program using assembly language (LMC).</p>	<p>-Determine the need for translators. Use sequence, variables, and input in Python. Design programs using a flowchart.</p> <p>-Use randomisation in programs. Work with arithmetic and logical expressions. Use selection and nested selection in Python.</p> <p>-Use a while loop and a for loop in Python. - Perform validation checks on data entry. Design programs using pseudocode</p> <p>-Explain the differences between a procedure and a function. Describe scope of variables. Use functions and procedures as part of the structured approach to programming. Test a program for robustness</p>	<p>- Define the terms 'decomposition', 'abstraction', and 'algorithmic thinking'. Use trace tables.</p> <p>-Describe a linear and binary search. Explain the key algorithms for a bubble, merge, and insertion sort.</p> <p>-Determine the ethical, legal, environmental, and cultural impacts of technology.</p>	<p>- Algorithms</p> <p>- Programming</p> <p>- Data Representation</p> <p>- Computer Systems</p> <p>- Cyber Security</p> <p>- Databases & SQL</p> <p>- Ethical, Legal and Society Impacts of technology</p>		

		-Define the term 'graphical user interface' (GUI). Perform string handling operations. - Describe the various ways that users and organisations can be affected by cyberattacks.				
Acquired Knowledge / Skills	Number bases Binary Maths Hexadecimal Text Representation Bitmap Images Vector Images Representation of sound Computer Systems Computer Software CPU Fetch Decode Execute Main Memory Secondary Storage Logic Gates Assembly Language	Sequence Selection Iteration Sub routines Strings Lists Dictionaries Data Files Cybercrime Hackers motivation Automated Cybercrime Non- Automated Cybercrime Software Designed Defence Cyber Security Vulnerabilities	Computational Thinking Searching & Sorting Algorithms Impact of tech General data protection act Copyright Freedom of information act Computer misuse act Cultural impacts Privacy & Surveillance Environmental impact Ethical Impact	Exam techniques, deciphering question key words		
Assessment	Homework per topic End of unit Assessment	Homework per topic End of unit Assessment	Homework per topic End of unit Assessment	Exam Questions Revision		