# YEAR 13 CURRICULUM SUMMARY

| When? | Knowledge | Knowledge | Assessment |
|---|---|---|---|
| **AUTUMN Term – FIRST Half** (7 Weeks) | a) **Data Protection Act**<br><br>b) **Computer Misuse Act**<br><br>c) **Copyright and Patents Act**<br><br>d) **Regulation of Investigatory Powers Act** | **These include but are not limited to:**<br><br>a) **Computers in the workforce**<br><br>b) **Automated decision making**<br><br>c) **Artificial intelligence**<br><br>d) **Environmental effects**<br><br>e) **Censorship and the Internet** | |
| | d) **Object-oriented languages (using Java/C++ style pseudocode) with an understanding of classes, objects, methods, attributes, inheritance, encapsulation and polymorphism** | **Thinking abstractly (introduced)**<br><br>d) **Object-oriented languages (using Java/C++ style pseudocode) with an understanding of classes, objects, methods, attributes, inheritance, encapsulation and polymorphism** | **Practical OO pseudocode exercises** |

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| **AUTUMN Term – SECOND Half** | a) **The differences between and uses of CISC and RISC processors**<br>b) **GPUs and their uses (including those not related to graphics)**<br>c) **Multicore and Parallel systems**<br><br>c) **The use of pipelining in a processor to improve efficiency**<br><br><br>a) **The nature of applications**<br><br>b) **Utilities**<br><br>c) **Open source vs Closed source1.2.1**<br>b) **Memory Management (paging, segmentation and virtual memory)** | e) **Use of abstraction**<br><br>f ) **Candidates should apply their knowledge of**<br><br>• **backtracking**<br>• **data mining**<br>• **heuristics**<br>• **performance modelling**<br>• **pipelining**<br>• **visualisation**<br><br>**to solving problems**<br><br><br>**Thinking Concurrently (introduction)** | **Programming exercises complex enough to demonstrate and utilise computational methods** |

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| **SPRING Term – FIRST Half** (6 Weeks) | c) **Interrupts** <br><br> d) **Scheduling: Round Robin, First come first served, Multi-level feedback queues, shortest job first and shortest remaining time** <br><br> h) **Virtual Machines** | | |
| | d) **Translators: Interpreters, compilers and assemblers** <br><br> e) **Stages of compilation (Lexical Analysis, Syntax Analysis, Code Generation and Optimisation)** <br><br> f) **Linkers and loaders** | | |

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| **SPRING Term – SECOND Half** | **Analysis**<br><br>**Problem identification**<br><br>**Stakeholders**<br><br>**Research the problem**<br><br>**Specify the proposed solution** | | |
| | **Design**<br><br>**Decompose the problem**<br><br>**Describe the solution**<br><br>**Describe the approach to testing** | | |

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| **SUMMER Term – FIRST Half** | **Developing (and testing ) the solution**<br><br>**Iterative development process**<br><br>**Development Testing**<br><br>**Post development testing** | | |
| | **Evaluation**<br><br>**Success of solution**<br><br>**Describe the final product**<br><br>**Maintenance and development.** | | |