QPHS Year 13 Computer Science Curriculum Map

Term	Title	Unit summary	Assessment
1	**Topic 12 – OOP and functional programming** **Topic 9 – Regular Languages (start)** **Topic 11 – Databases & Software development** **NEA**	• Basic concepts of Object Oriented Programming, Object-oriented design principles, Functional programming, Function application, Lists in functional programming, Big data • Mealy machines, Sets, Regular expressions, The Turing machine, Backus-Naur Form, Reverse Polish Notation • Entity relationship modelling, Relational databases and normalisation, Introduction to SQL, Defining and updating tables using SQL, Systematic approach to problem solving • Complete NEA (Implemention, Testing and Evaluation) – ensure testing video is created and linked within documentation	Past paper questions on Topic 12, Topic 9 and Topic 11 (and including questions from previous topics) Text book exercises for each chapter within the topic Isaaccomputerscience quizzes Assessment of programming tasks
2	**Topic 9 – Regular Languages (finish)** **Topic 8 – Algorithms** **Topic 7 – Data Structures** **Paper 1 Exam Prep**	• Complete any regular languages sub-topics not completed last term • Recursive algorithms, Big-O notation, Searching and sorting, Graph-traversal algorithms, Optimisation algorithms, Limits of computation • Queues, Lists, Stacks, Hash tables and dictionaries, Graphs, Trees, Vectors • Modelling and understanding the skeleton code for Paper 1, Complete sample questions to changes and additions on the skeleton code	Past paper questions on Topic 9, 8 & 7 (and previous units) Text book exercises for each chapter within the topics Isaaccomputerscience quizzes Assessment of programming tasks NEA marked and feedback given
3	**Topic 10 – The internet**	• Structure of the internet, Packet switching and routers, Internet security, TCP/IP and standard application layer protocols, IP addresses, Client server model • Recap all previous units and cover weaker areas in detail	Past paper questions on all units Text book exercises for each chapter within the topic Isaaccomputerscience quizzes Mock exam covering both all theory and paper 1 based on the skeleton code for the real exam