



Subject	Year	Term
Computer Science	12	2
Topic		
Programming, system software, Computational thinking, software development		
Content (Intent)		
Prior Learning (Topic)	Programming, data structures, data types, boolean algebra, system architecture	
The functionality and purpose of the operating system and different types of operating system, applications software, software licences and how source code is translated into executable code.		
Programming. The use of an IDE to develop/debug a program, and the fundamentals of programming including recursion and the concepts of OOP, while recognising that some students may have had little previous experience of programming and others will already be seasoned programmers.		
What is meant by “computational thinking” in its many forms. Problem recognition and decomposition, abstraction and algorithm design. It covers the topics of backtracking, data mining, heuristics, performance modelling, pipelining and visualisation. Systems analysis methods and algorithm design, programming paradigms, assembly language and the main concepts of object-oriented programming.		
Future Learning (Topic)	Programming, exchanging data, coursework	
What Knowledge and Skills will be taught (Implementation)	How will your understanding be assessed & recorded (Impact)	
The different types of operating system, utilities, application software. How they are regulated and managed by software compaies	Worksheets completed in class and at home and marked. These will be given overall grade based on the quality of the answer and there will also be specific feedback.	
In depth understanding of how to use Python to build applications, including the use of classes, objects and tkinter. Use of Python to solve a series of problems using a variety of data structures. Breaking problems down to programmable components. The use of data mining to reveal unexpected patterns from data, heuristics when problems are intractable, pipelining to increase efficiency, and visualisation for humans to understand patters and problems.	Worksheets completed in class and at home and marked. These will be given overall grade based on the quality of the answer and there will also be specific feedback.	
How can parents help at home?		
Ensure homework is done. There is preparation for in-class tests.		
Helpful further reading/discussion (including Reading and Vocabulary Lists)		
Reading Course textbook ISBN 978-1910523056 OCR AS and A Level Computer Science, by Heathcote and Heathcote PG-online resources 2, 3 10 and 11	Vocabulary Lists	Normalisation Referential integrity Validation Verification ACID Not D-type flip flop Adder Half adder