

Curriculum map - Year 13

Exam board - OCR	https://ocr.org.uk/images/170844-specification-accredited-a-level-ace-computer-science-h446.pdf	https://www.youtube.com/watch?v=ShoXaQ_2ixs&list=PL04uZ7242_M4cbiwF5aM_z8vu97txWF6
2 papers 40% each. Project is worth 20%	Students have access to past sample coursework.	Useful website - http://www.learncomputing.org/a2revision.php
Past papers -	https://ocr.org.uk/qualifications/as-a-level-ace/computer-science-h046-h446-from-2015/assessment1/	

Timeline	Topics/Objectives	Practical activities	Assessment	Feedback and analysis	Project
Autumn 1	Data Structure Students will learn about the following topics: Multi dimensional array List and linked list. Stack, queue, graph, tree, hash table. Students will also learn how to code these structure in a programming language. OOP Knowledge on Class, inheritance, polymorphism, encapsulation	Students will program associated algorithms for all data structure. Students will use a high level programming language to apply skills of OOP.	Homework - past exam questions. End of topic question.	Individual feedback on homework and assessment. This should give students the idea on topics for further revision. Teacher will also know which topics to revisit before final exams.	Students will also be working on their individual projects. The final deadline is end of April. There are interim deadlines to complete each part of the project. They will be notified about this in lesson.
Autumn 2	Database Normalisation upto 3NF Students will learn about database and relationship between tables.	Use of database software such as SQL. This will help some students with their projects.	Past exam questions and homework.		Project continues. Students must finish designing their program and start coding and testing.
Spring 1	Specialist algorithms and recursion Students need to understand and apply the concept of the following: Measures and methods to determine the efficiency of different algorithms. Big O notation (constant, linear, polynomial, exponential and logarithmic complexity). Comparison of the complexity of algorithms. Algorithms for the main data structures. (stacks, queues, trees, linked lists, depth-first (post-order) and breadth-first traversal. bubble sort, insertion sort, merge sort, quick sort, Dijkstra's shortest path algorithm, A* algorithm, binary search and linear search).	Students will first learn the algorithm and they will program them for better understanding.	Homework and end of topic test.	Class and individual feedback to address common mistakes.	
Spring 2 - focus is on revision and project.	Revision and walking talking mocks	Students will solve multiple full papers as part of their class and homework. This will give students the opportunity to get accustomed with the structure before the mock.		Regular revision will prepare students for upcoming exams. Teacher's feedback will provide them with valuable techniques to compose model answers. Individual revision list.	Students will be working on the coding part of their project and possibly aiming for user testing too.
Mocks - both papers.				Individual marking discussion to address the common issues on papers and class	
May-15	Deadline for uploading graded coursework				
Summer 1	Feedback on mocks and data analysis. Last minute revision. Students will watch videos as homework and answer exam style questions in lesson. Peer/self assessment and analysis. This will tailor students' independent revision outside lessons.				
A level exams	Paper 1 - 1st June AM Paper 2 - 9th June AM				