

A Level Computer Science Y12 Exam Revision Timetable

Student Name:

We will be asking you to revise different topics each week using weekly revision activities via Teams.

Revision Resources

- Smart revise
- StudyHubCS <https://studyhubcs.netlify.app>
- William Physics Website <https://www.williamsphysics.co.uk/computerscience> (OCR A-Level)

Exam

You will have 2 exam papers (1 hour 30 minutes)

Date	Unit 1	Revised & Tested?
Week 1	<p>Topic 1 Structure and function of the processor</p> <ul style="list-style-type: none"> • ALU, CU, Registers, Buses, data, address and control and how they relate to assembly language. • FDE Cycle and its effects on the registers. • CPU performance, pipelining and architectures. <p>Types of Processors CISC and RSIC, GPUs and Multicore and Parallel systems.</p> <p>Input, output and Storage Different types of devices, Magnetic, flash and optical storage, RAM and ROM, Virtual Storage</p>	
Week 2	<p>Topic 7 Programming techniques</p> <ul style="list-style-type: none"> • Variables vs Constants • Programming Constructs (Selection, Sequence, Iteration) • Scope of variables (Local vs Global) • Data types • Modularity (Function vs Procedure) • Passing by value vs passing by reference • Arrays, Tuples and Lists • Files • IDE Tools • Type of errors and suitable test data • Programming Standards and maintainability 	
Week 3	<p>Topic 4 Data Types</p> <ul style="list-style-type: none"> • Binary calculations • sign and magnitude • two's complement • Hexadecimal • Character Sets (ASCII AND UNICODE CHARACTER SETS) • Addition and subtraction of binary • Floating point numbers • Normalising Floating Point 	
Week 4	<p>Topic 2 System Software</p>	

	<ul style="list-style-type: none"> • Operating Systems Types <ul style="list-style-type: none"> ○ Real time ○ Distributed ○ Embedded ○ Multi-tasking ○ Multi-user ○ Memory Management • Interrupts • Scheduling • BIOS • Device Drivers <p>Virtual Machines.</p> <p>Applications Generation</p> <ul style="list-style-type: none"> • Application software • Utilities 	
Week 5	<p>Topic 6 Elements of computational thinking</p> <ul style="list-style-type: none"> • Thinking abstractly • Thinking ahead • Thinking procedurally • Thinking logically • Thinking concurrently 	
Week 6	<p>Topic 3 Compression, encryption and hashing</p> <ul style="list-style-type: none"> • How data is exchanged between different systems • Compression, Encryption and Hashing • Lossy vs Lossless compression. • Run length encoding and dictionary coding for lossless compression. • Symmetric and asymmetric encryption Different uses of hashing. 	
Week 7 Half Term	<p>Topic 2 Types of Programming Languages</p> <ul style="list-style-type: none"> • Translators: interpreters, compilers, and assemblers. • Assembly language (including following and writing simple programs with the Little Man Computer instruction set). • Modes of addressing • Stages of compilation (lexical analysis, syntax analysis, code generation, and optimisation) • Linkers and loaders and use of libraries. 	
Week 8	<p>Topic 8 Algorithms – Searching and Sorting Algorithms</p> <p>Analysis and design of algorithms for a given situation.</p> <ul style="list-style-type: none"> • Bubble Sort • insertion sort • merge sort • quick sort <p>Binary search and linear search.</p> <p>Topic 8 Big O</p>	
Week 9	Paper 1 Computer systems	
Week 10	Paper 2 Algorithms and programming	