

CAMBRIDGE INTERNATIONAL AS & A LEVEL

Computer Science 9618

Syllabus Overview

Examinations 2027, 2028 and 2029

Understanding the whole syllabus

The subject connects how digital systems work with how useful solutions are designed and evaluated. Knowing a term is only the starting point: you need to explain a system, apply a method and judge whether a solution meets its requirements. The assessment route determines whether those skills are demonstrated on paper or at a computer.

For Computer Science 9618, the content map below follows the approved subject briefing and the official syllabus. Labels group related areas for orientation; the detailed syllabus remains the authority for individual learning requirements.

Content map

Syllabus area or component	What the area covers
AS 1-8: Theory foundations	At AS Level, you will study information representation, networks and communication, hardware, processor architecture, system software, data security, privacy, ethics and ownership. You will also explore relational databases and database-management systems.
AS 9-12: Problem solving and development	The problem-solving section develops computational thinking, algorithm design, data structures, programming and the software-development lifecycle. Regular programming practice is essential for learning how to design, test, debug and improve solutions.
A Level 13-18: Advanced theory	The full A Level extends into file organisation, floating-point representation, internet protocols, advanced processors, parallel processing and virtual machines. You will also study operating systems, translation software, encryption, digital certificates and artificial intelligence.
A Level 19-20: Advanced problem solving and programming	Advanced problem-solving includes recursion, complex algorithms, programming paradigms, file processing and exception handling.

These areas should be read as a connected course. Begin with the foundational knowledge identified in the first part of the map, then build towards the applications and explanations that depend on it. Alternate explanation with application. Keep an organised record of commands, algorithms or procedures and the errors they resolve. Practise the assessed mode, including written reasoning when an examination is paper-based. Where a row describes a choice of topics or components, study the selection required by your agreed route rather than treating all alternatives as compulsory.

Qualification and component choices

Qualification route	Components	Meaning
AS Level only	1 and 2	Standalone AS qualification, graded a-e
Staged A Level	1 and 2 first; then 3 and 4	Carry forward eligible AS marks within Cambridge rules and time limits
Full A Level in one series	1, 2, 3, 4	All required components; A Level graded A*-E

AS and A Level percentages refer to different qualification totals. A component can therefore have one weighting at AS and a different weighting in the full A Level. Confirm the entry option and any carry-forward arrangements with the centre.

The assessed skills

Assessment objectives describe the abilities Cambridge looks for across the qualification. The following explanations paraphrase the syllabus objectives; they are not additional topics or separate orientation tasks.

Assessment objective	Meaning for the learner
AO1: Knowledge and understanding	Explain concepts including abstraction, logic, algorithms and data representation.
AO2: Application	Apply computing concepts and analyse a problem in computational terms.
AO3: Design, programming and evaluation	Build and assess a solution, supporting judgements about how well it works.

These abilities work together in an answer. Accurate knowledge supports application, while a clear explanation shows how the evidence or method leads to a conclusion. The balance varies by component, so the next lesson connects these abilities with the actual assessment formats.

Key pointers: Follow the stated examination-year syllabus, cover the required areas for your route and develop skills alongside knowledge. **Next:** Open **Assessment Overview**.