

# Cambridge International Advanced Subsidiary & Advanced Levels - Computer Science (9618)

Cambridge  
International  
A Level

*Cambridge International Advanced Level is one of the most recognised qualifications around the world. For over 50 years, A Levels have been accepted as proof of academic ability for entry to universities and institutes of higher education. A Levels are also important to employers who frequently demand A Levels as a condition of job entry.*

*Computer science is the study of the foundational principles and practices of computation and computational thinking and their application in the design and development of computer systems. This syllabus aims to encourage the development of computational thinking, that is thinking about what can be computed and how by the use of abstraction and decomposition.*

**Futurekids Computer Learning Center (Sch Reg No: 29075, 29076)**  
**Registered Cambridge International School**  
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# Introduction

This syllabus provides a general understanding and perspective of the development of computer technology and systems, which will inform their decisions and support their participation in an increasingly technologically dependent society; It also provides the necessary skills and knowledge to seek employment in areas that use computer science; Students' knowledge and understanding of computer science can be developed through entry to higher education, where this qualification will provide a useful foundation for further study of computer science or more specialist aspects of computer science.

## Scheme of Assessment

Candidates may choose to:

- ◇ take Papers 1, 2, 3 and 4 in the same examination series, leading to the full Cambridge International A Level.
- ◇ follow a staged assessment route by taking Papers 1 and 2 (for the AS Level qualification) in one series, then Papers 3 and 4 (for the full Cambridge International A Level) in a later series.
- ◇ take Papers 1 and 2 only (for the AS Level qualification).

### ADVANCED SUBSIDIARY LEVEL (AS Level)

Paper	Type	Duration	Marks	Weight
Paper 1 Theory Fundamentals	Written	1 hr 30 mins	75	25%
Paper 2 Fundamental Problem-solving & Programming Skills	Written	2 hrs	75	25%

### ADVANCED LEVEL (A Level)

In addition to Papers 1 and 2.

Paper	Type	Duration	Mark	Weight
Paper 3 Advanced Theory	Written	1 hr 30 mins	75	25%
Paper 4 Practical	Practical	2 hrs 30 mins	75	25%

All 4 papers will take place at FUTUREKIDS Computer Learning Center, by means of a CIE-set assessments, under controlled examination conditions. Paper 1, 2 and 3 are written papers. Candidates answer all questions. Paper 4 is a practical paper. Candidates answer all questions on a computer without internet or email facility.

## Examinations Schedule

International A and AS Level examination sessions occur twice a year, in June and November, with results issued in August and January respectively.

## Grading System

Subjects are graded A\* through to E. Grade A\* is awarded for the highest level of achievement, grade E for the lowest.

## Recognition

International A Level and AS Level have widespread international recognition as educational qualifications. This recognition is because:

- ◇ International A and AS Level qualifications are recognised by universities as equivalent in value to UK A and AS Levels
- ◇ Good grades at A and AS Level can result in one full year of advanced standing or credit at universities in the USA and Canada
- ◇ Good A and AS Level grades are vital for admission to all the world's major English-speaking universities and many non-English-speaking universities

# Curriculum Content

The curriculum content is set out in twenty interrelated sections. These sections should be read as an integrated whole and not as a progression. The sections are as follows:

<p><i>At AS Level (Theoretical)</i></p> <ol style="list-style-type: none"> <li>1. Information representation</li> <li>2. Communication</li> <li>3. Hardware</li> <li>4. Processor fundamentals</li> <li>5. System software</li> <li>6. Security, privacy and data integrity</li> <li>7. Ethics and ownership</li> <li>8. Database</li> </ol>	<p><i>At AS Level (Programming Skills)</i></p> <ol style="list-style-type: none"> <li>9. Algorithm design and problem-solving</li> <li>10. Data type and structures</li> <li>11. Programming</li> <li>12. Software development</li> </ol>
<p><i>At A2 Level (Theoretical)</i></p> <ol style="list-style-type: none"> <li>13. Data representation</li> <li>14. Communication and Internet technologies</li> <li>15. Hardware and virtual machine</li> <li>16. System software</li> <li>17. Security</li> <li>18. Artificial Intelligence (AI)</li> </ol>	<p><i>At A2 Level (Programming Skills)</i></p> <ol style="list-style-type: none"> <li>19. Computational thinking and problem-solving</li> <li>20. Further programming</li> </ol>

## Course Outline

<i>Module</i>	<i>Section(s) Covered</i>	<i>Study Hours</i>
<i>AS Level</i>		
<i>Module 1: Programming Basics</i>	<i>9, 10, 11</i>	<i>24 (12 Lessons)</i>
<i>Module 2: Algorithm Design &amp; Problem-solving</i>	<i>11, 12</i>	<i>24 (12 Lessons)</i>
<i>Module 3: Computer Systems &amp; Organisations</i>	<i>1, 3, 4, 5</i>	<i>20 (10 Lessons)</i>
<i>Module 4: Databases &amp; Communication Technologies</i>	<i>2, 6, 7, 8</i>	<i>28 (14 Lessons)</i>
<i>A2 Level (A Level)</i>		
<i>Module 5: Advanced Problem Solving Methods</i>	<i>13, 18, 19</i>	<i>32 (16 Lessons)</i>
<i>Module 6: Programming Paradigms</i>	<i>19, 20</i>	<i>20 (10 Lessons)</i>
<i>Module 7: Communication Technologies &amp; Security</i>	<i>13, 14, 17</i>	<i>20 (10 Lessons)</i>
<i>Module 8: System Software &amp; Artificial Intelligence</i>	<i>15, 16, 18</i>	<i>24 (12 Lessons)</i>

### Prerequisite

Applicants should:

- ◇ Either, have grade B or above in Information Communication Technology at IGCSE;
- ◇ Or, have grade C or above in Computer Science at IGCSE;
- ◇ Or, have 4 point or above in Information Communication Technology (Software module) at HKDSE;
- ◇ Or, pass a written and practical entry test.

### Further Enquiries

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# Schedule

The course is scheduled every Friday 5:00pm - 7:00pm or Saturday from 10:30am - 12:30pm / 3:30pm - 5:30pm.

Module	Date		Fee
	Friday	Saturday	
<b>Module 1:</b> Programming Basics (I)	2024 Nov 08, 15, 22, 29, Dec 06, 13	2024 Nov 09, 16, 23, 30, Dec 07, 14	<b>6 lessons</b> \$5,520
Programming Basics (II)	2024 Dec 20, 27, 2025 Jan 03, 10, 17, 24	2024 Dec 21, 28, 2025 Jan 04, 11, 18, 25	<b>6 lessons</b> \$5,520
<b>Module 2:</b> Algorithm Design & Problem-solving (I)	2025 Jan 31, Feb 07, 14, 21, 28, Mar 07	2025 Feb 01, 08, 15, 22, Mar 01, 08	<b>6 lessons</b> \$5,520
Algorithm Design & Problem-solving (II)	2025 Mar 14, 21, 28, Apr 04, 11, 18	2025 Mar 15, 22, 29, Apr 05, 12, 19	<b>6 lessons</b> \$5,520
<b>Module 1 &amp; Module 2 Practical &amp; Written Test : Date and time to be confirmed</b>			\$500
<b>Module 3:</b> Computer Systems & Organisations	2025 Apr 25, May 02, 09, 16, 23, 30, Jun 06, 13, 20, 27	2025 Apr 26, May 03, 10, 17, 24, 31, Jun 07, 14, 21, 28	<b>10 lessons</b> \$9,200
<b>Module 4:</b> Databases & Communication Technologies (I)	2025 Jul 04, 11, 18, 25, Aug 01, 08, 15	2025 Jul 05, 12, 19, 26, Aug 02, 09, 16	<b>7 lessons</b> \$6,440
Databases & Communication Technologies (II)	2025 Aug 22, 29, Sep 05, 12, 19, 26, Oct 03	2025 Aug 23, 30, Sep 06, 13, 20, 27, Oct 04	<b>7 lessons</b> \$6,440
<b>Module 3 &amp; Module 4 Written Test : Date and time to be confirmed</b>			\$500
<b>Module 5:</b> Advanced Problem Solving Methods (I)	2025 Oct 10, 17, 24, 31, Nov 07, 14, 21, 28	2025 Oct 11, 18, 25, Nov 01, 08, 15, 22, 29	<b>8 lessons</b> \$7,360
Advanced Problem Solving Methods (II)	2025 Dec 05, 12, 19, 26, 2026 Jan 02, 09, 16, 23	2025 Dec 06, 13, 20, 27, 2026 Jan 03, 10, 17, 24	<b>8 lessons</b> \$7,360
<b>Module 6:</b> Programming Paradigms	2026 Jan 30, Feb 06, 13, 20, 27, Mar 06, 13, 20, 27, Apr 03	2026 Jan 31, Feb 07, 14, 21, 28, Mar 07, 14, 21, 28, Apr 04	<b>10 lessons</b> \$9,200
<b>Module 5 &amp; Module 6 Practical &amp; Written Test : Date and time to be confirmed</b>			\$500
<b>Module 7:</b> Communication Technologies & Security	2026 Apr 10, 17, 24, May 01, 08, 15, 22, 29, Jun 05, 12	2026 Apr 11, 18, 25, May 02, 09, 16, 23, 30, Jun 06, 13	<b>10 lessons</b> \$9,200
<b>Module 8:</b> System Software & Artificial Intelligence (I)	2026 Jun 19, 26, Jul 03, 10, 17, 24	2026 Jun 20, 27, Jul 04, 11, 18, 25	<b>6 lessons</b> \$5,520
System Software & Artificial Intelligence (II)	2026 Jul 31, Aug 07, 14, 21, 28, Sep 04	2026 Aug 01, 08, 15, 22, 29, Sep 05	<b>6 lessons</b> \$5,520
<b>Module 7 &amp; Module 8 Written Test : Date and time to be confirmed</b>			\$500
<b>AS Examination</b> For the student who has completed module 1 - module 4 Oct - Nov 2026 (details will be announced later)			
<b>A2 Examination</b> For the student who has completed module 1 - module 8 Oct - Nov 2026 (Details will be announced later)			

## Remarks:

1. Full payment should be made one week before the commencement date of each module.
2. Any make up class other than the scheduled time will require a \$200 administration fee.
3. No class on public holiday, make-up class will be arranged.
4. A course book will be chosen for students to study, student can buy the book through Futurekids or from other online bookshop.
5. Enhancement courses and mock examinations will be held before the examination for students to re-enforce their knowledge in each module covered and familiarise the examination patterns. Details of the schedule will be announced later.
6. Prices are subject to change in due course, details will be announced one month before the module begins.