

A Level Computer Science: OCR

Overview: A Level Computer Science is designed to give students a deep understanding of how computers work, from the theoretical underpinnings to practical programming skills. It explores the fundamental concepts of computing, programming, and algorithms, enabling students to solve complex problems and think computationally. Studying Computer Science at our UTC provides unique opportunities to work on industry-relevant projects, access state-of-the-art technology, and collaborate with local tech companies, ensuring students gain practical experience alongside theoretical knowledge.

Why Study A Level Computer Science?

Computer Science is essential in a world increasingly reliant on technology. It develops analytical and problem-solving skills, preparing students for careers in software development, cybersecurity, artificial intelligence, and data science. At our UTC, students benefit from a practical, hands-on approach to learning and the opportunity to apply their skills in real-world scenarios. This course is ideal for students who are logical thinkers and enjoy problem-solving and understanding the inner workings of software and hardware systems.

Potential Career Pathways:

A Level Computer Science opens doors to a wide range of university courses and careers, including:-

- Computer Science
- Software Engineering
- Data Science
- Cybersecurity
- Artificial Intelligence
- Game Development.

It is also highly valued in fields like mathematics, physics, and engineering. The skills learned through this course are in demand across various industries, making it a versatile and valuable qualification.

Topics Covered:

- Characteristics of Contemporary Processors, Input, Output, and Storage Devices
- Software and Software Development
- Exchanging Data
- Data Types, Data Structures, and Algorithms
- Legal, Moral, Cultural, and Ethical Issues
- Elements of Computational Thinking
- Problem Solving and Programming
- Algorithms to Solve Problems and Standard Algorithms

Assessment:

- **Computer Systems (01):**
 - Assesses: Theoretical understanding of computer systems
 - Written Exam: 2 hours 30 minutes (no calculators allowed)
 - 140 marks, 40% of A Level
- **Algorithms and Programming (02):**
 - Assesses: Problem-solving skills and algorithmic thinking
 - Written Exam: 2 hours 30 minutes (no calculators allowed)
 - 140 marks, 40% of A Level
- **Programming Project (03 or 04):**
 - Assesses: Practical application of programming skills through a self-chosen project
 - Non-Exam Assessment (NEA): 70 marks
 - Moderated Upload or Postal Submission
 - 20% of A Level

Entry Requirements:

- Grade 5 in GCSE English, Grade 5 in GCSE Maths, and Grade 5 in GCSE Computer Science or Grade 6 in ICT.

