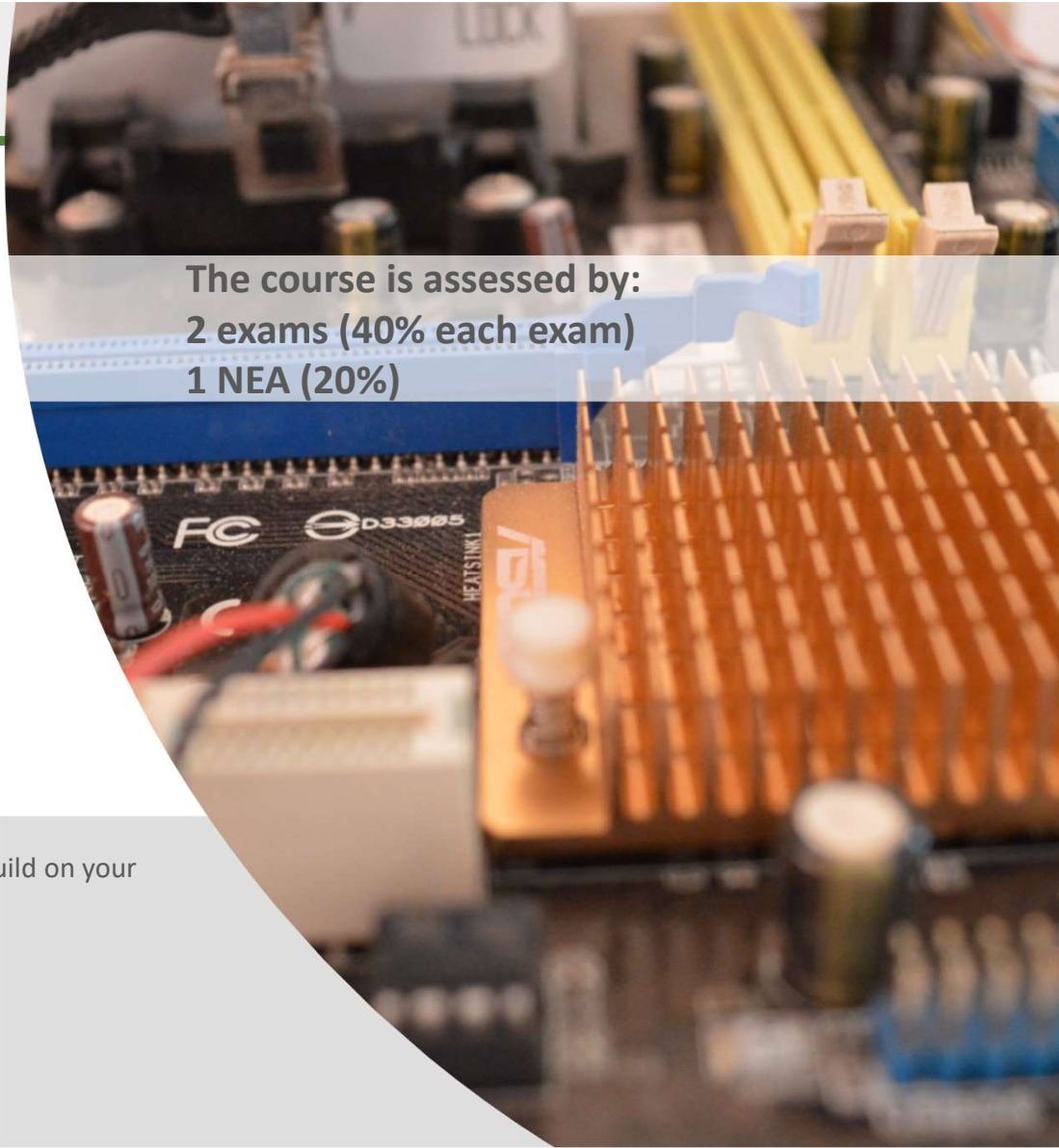


GCSE to A level

# Computer Science Transition workbook

- The topic of **Computer Science** is at the heart of the modern world
- Studying it can make you extremely sought after in today's job market
- The transition from GCSE to A level is significant, this includes:
  - An increased emphasis on **technical content**
  - An increased emphasis on **independent research**

This workbook is designed to allow you to practice some of these skills and build on your existing knowledge.



The course is assessed by:  
2 exams (40% each exam)  
1 NEA (20%)

# 1 “Tell me about yourself”



## Why did you choose Computer Science?

In this simple task you get the opportunity to tell me your choices and reasons behind choosing to study Computer Science. Please answer all questions as best you can.

1. Why did you choose to study A level Computer Science?

2. What other courses have you chosen to study at Key Stage 5, and what made you choose this combination?

3. What are you hoping to achieve from studying Computer Science?

4. How would you describe yourself as a learner at GCSE? What skills where you good at, what areas would you like to improve on?

5. What are your other hobbies and interests outside of school? Anything related to Computing?

## Looking under the hood of the processor

The CPU “Central Processing Unit” is the central core of any computer system. You will study what it contains and how it works it in depth at A Level.

1. Start by watching the following 5 videos in the following playlist from Craig ‘n’ Dave:
  1. [https://www.youtube.com/watch?v=dVi2B7fGVm4&list=PLCiOXwirraUB7V2i0SJ4SSJFqRV\\_LtgzW](https://www.youtube.com/watch?v=dVi2B7fGVm4&list=PLCiOXwirraUB7V2i0SJ4SSJFqRV_LtgzW)
2. Produce a fully annotated diagram on a single sheet of A4 / A3 paper which shows how the CPU works.
3. Make sure the diagram includes and covers:
  - Major CPU components and what they are for:
    - Arithmetic Logic Unit (ALU)
    - Control Unit (CU)
    - Cache
  - The main registers
    - Program Counter (PC)
    - Memory Address Register (MAR)
    - Current Instruction Register (CIR)
    - Memory Data/Buffer Register (MDR / MBR)
  - Fetch-decode-execute cycle
  - Include annotations which explain how the performance of a CPU can be improved by:
    - Increasing the clock speed
    - Increasing the cache size
    - Increasing the number of cores

