



# Learning Journey



## A Level in Computer Science (H446)

### 2.1 Elements of computational thinking

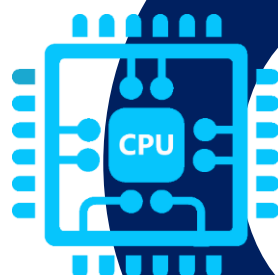
NEA  
3.4 Evaluation  
(20 marks)

- 2.1.1 Thinking abstractly
- 2.1.2 Thinking ahead
- 2.1.3 Thinking procedurally
- 2.1.4 Thinking logically
- 2.1.5 Thinking concurrently

- 1.5.1 Computing related legislation
- 1.5.2 Moral and ethical Issues



### 1.5 Legal, moral, cultural and ethical issues



- 1.5.1 – Systems software
- 1.5.2 Utility software

### 1.5 – Systems Software

- Analysis of design of algorithms
- Searching algorithms
- Bubble sort and Insertions sort
- Merge sort and Quicksort
- Graph traversal
- Optimisation

### 2.3 – Algorithms

13

NEA  
3.3 Developing  
the solution  
(25 marks)

- 1.4.1 Data Types
- 1.4.2 Data Structures
- 1.4.3 Boolean Algebra

### 1.4 Data types, data structures and algorithms



- 1.3.1 Compression, Encryption and Hashing
- 1.3.2 Databases
- 1.3.3 Networks
- 1.3.4 Web Technologies

### 1.3 Exchanging data

NEA  
3.2 Design of the  
solution  
(15 marks)

### 2.3 Data Structures

- Programming basics
- Selection
- Iteration
- Subroutines
- Recursion
- Object orientated programming

NEA  
3.1. Analysis of  
the problem  
(10 marks)

- Array, Tuples and records
- Queues
- List and linked lists
- Stacks
- Hash tables
- Graphs
- Trees

### 2.2 Programming techniques

### 1.2 Software and software development

- 1.1.1 Structure and function of the processor
- 1.1.2 Types of processor
- 1.1.3 Input, output and storage

### 1.1 The characteristics of contemporary processors, input, output and storage devices

12

Paper 1: Computer Systems 40%  
Paper 2: Algorithms and Programming 40%  
NEA – Programming Project 20%