9597 H2 Computing Syllabus

Paper 1 Format:
- Duration: 3h15min
  - Time included for printing
- Evidence file:
  - ALWAYS PASTE MAIN PROGRAMME

Paper 1 (Practical) Content:
- Fundamental algorithms:
  - Search:
    - Linear / sequential
    - Binary search (iterative / recursive)
    - Hash table search (direct access: seek( ) / tell( ))
  - Sort:
    - Bubble sort (normal / improved version)
    - Insertion sort
    - Quick sort
  - Modulo operations / weighted modulo; RNG
  - Binary search tree:
    - Building: iterative / recursive
    - Sort: iterative / recursive
    - Search: iterative / recursive
    - Traversal: recursive (pre-order / in-order / post-order)
- Abstraction:
  - Data representation:
    - ASCII code: ord( ) / chr( )
    - Binary, octal, hexadecimal
  - Data structures: associated operations (insert / delete / search)
    - Array: append / pop
    - Dictionary: map values
    - Stack: push / pop
    - Queue: enqueue / dequeue
    - List: add / delete
- Modularity:
  - Types of programme errors;
  - Test cases: normal / abnormal / erroneous / boundary data
  - Data validation: range / length / format / data type

- ○ Programme design:
  - ◆ Modular designs / top-down approach
- ○ Meaningful variable names
- ● Programming:
  - ○ I/O operations
  - ○ Serial / sequential text files:
    - ◆ Open / close file
    - ◆ Reading / writing file
    - ◆ Finding locations: seek( ) / tell( )
  - ○ Classes / objects
  - ○ Encapsulation: do not access class data from main function
  - ○ Inheritance: calling superclass *__init__*
  - ○ Polymorphism