

Unit Overview - Python Programming

Completion date: December

Target grade for tests

You will learn about

- Decomposition of problems.
- Programming Efficiently and Robustly

You will be able to

- Use variables and arrays to store and process information.
- Apply decisions and iteration in your program code.
- Develop structured code using your own functions.

TERM 1	
<p>Topic Overview</p> <ol style="list-style-type: none"> 1. Intro – what we cover Algorithms 2. Variables and arithmetic operations. 3. Selection and relational operations. 4. String Manipulation. 5. Definite Iteration 6. Indefinite Iteration 7. Python Functions and subroutines. 8. Data Structures – Arrays. 9. Development of Hangman Game. 10. File Handling 11. Robustness - Validation 12. Robustness - authentication <p style="text-align: center;">Assessment Point</p>	<p>Key Words</p> <ul style="list-style-type: none"> • Algorithm: a set of instructions to perform a specific task. • Iteration: the process of repeating a set of instructions a specified number of times (determinate) or until a condition is met (non-determinate). • Variable: a storage location used to record values given a purposeful name by the programmer. • Data Type: classification of the type of data stored in a variable or other data structure. • Decomposition: breaking a problem into smaller and more manageable chunks. • Function: the decomposition of the program code into functional and/or repeated chunks. • Robustness: ensuring that code caters for all conditions and does not crash when an inappropriate condition or value is met. • Efficiency: ensuring the minimal amount of code is written and that the code runs with the least number of cycles as possible. • Selection: programmatically making a choice to determine which block of code to execute.
<p>Suggested reading or support available</p> <p> www.Codecademy.com https://www.jetbrains.com/pycharm-edu/ https://www.python.org/ http://www.tutorialspoint.com/python/ </p>	<p>Cross curricular</p> <p>Literacy: accuracy of spelling. Understanding and being able to explain a problem logically and in sequence.</p> <p>Numeracy: sequencing, comparisons using basic algebra, logic decisions (true\false)</p> <p>SMSC: Implications of safe and robust ICT systems.</p>