

Operators; Expressions; Shorthand Notation, Input/output statements;

Unit 2 Control Structure & Function: (4 weeks):

Control structures - conditional statements (Simple if, if-else, if-elif-else), loop control statements (for, while, for-in), break, continue; Function - Built-in Function, Creating User Defined functions, passing arguments to a function, Default arguments, Function returning a value, Assert function.

Unit 3 Built-in Data Structures: (5 weeks):

Mutable and immutable objects; Strings - built-in functions for string traversal, string operators and operations; Lists - creation, traversal, slicing and splitting operations, passing list to a function; Tuples, sets, dictionaries and their operations.

Unit 4 Object Oriented Programming: (4 weeks):

Introduction to classes, objects and methods; Standard libraries.

Practical Component

The practical assignment must include installation of software like Anaconda, Jupyter and Spyder notebook and list of python programs for implementation.

Essential readings

1. Balaguruswamy E. Introduction to Computing and Problem-Solving using Python, 2nd edition, McGraw Hill Education, 2018.
2. Brown, Martin C. Python: The Complete Reference, 2nd edition, McGraw Hill Education, 2018.
3. Downey, A. B. Think Python How to think like a Computer Scientist, 3rd Edition, 2020. <https://greenteapress.com/thinkpython2/thinkpython2.pdf>

Suggested readings

1. Taneja, S., Kumar, N. Python Programming- A Modular Approach, 1st edition, Pearson Education India, 2018.
2. Guttag, J.V. Introduction to computation and programming using Python, 2nd edition, MIT Press, 2016. <https://mitpress.mit.edu/9780262337397/introduction-to-computation-and-programming-using-python>

