

PG Department of Computer Science
Mary Matha Arts & Science College Mananthavady

Certificate Course

Advanced Python Programming

Syllabus

Course Code	Theory	Practical	Time
CCCSPY22-23	15 Hours	20 Hours	3.30 to 4.30

COURSE OUTCOME

- CO1:** Learn advanced python concepts
- CO2:** Understand data structures using python
- CO3:** Familiarize object oriented concepts using python
- CO4:** Understand web programming concepts using python

Module 1

Features of Python, Different Methods to Run Python, Basic Elements, Comments, Indentation in Python, Input and Output in Python, import function, Operators in Python, Branching, Iteration, range and enumerate functions **(8 Hours)**

Module 2

Data Structures – Definition, Linear Data Structures, Non-Linear Data Structures Python Specific Data Structures: List, Tuples, Set, Dictionaries, Comprehensions and its Types, Strings, slicing. Arrays - Overview, Types of Arrays, Operations on Arrays **(9 Hours)**

Module 3

Oops Concepts- Class, Object, Constructors, Types Of Variables, Types Of Methods. Inheritance: Single, Multiple, Multi-Level, Hierarchical, Hybrid, Polymorphism: With Functions And Objects, With Class Methods, With Inheritance, Abstraction: Abstract Classes Encapsulation And Polymorphism In Python. **(10 Hours)**

Module 4

Visualization - The Matplotlib Module, Plotting Simple Mathematical Functions-Famous Curves Power Series-Fourier Series-2d Plot Using Colors, Python And The Web, Cgi, Twisted (Networking Framework For Python), Some Popular Python Modules: Smtplib, Httpplib, Poplib **(8 Hours)**

Books and Reference:

1. Taming Python By Programming, Dr. Jeeva Jose, Khanna Publishing
2. Introduction to Computation and Programming Using Python with Application to Understanding Data - John V. Guttag, PHI (2016)
3. Introduction to Computer Science using Python - Charles Dierbach, Wiley (2015)
4. Python for Education by Ajith Kumar B P