

Subject Code: 1ET4050401	Subject Title: Python Programming
Pre-Requisite	Basic knowledge of programming

RATIONALE:

Easy to code: With the clear syntax developers get an idea on code identification instead of {};

Simple Syntax: Python has a simple syntax similar to the English Language.

COURSE OBJECTIVE:

To provide students with contemporary knowledge in PYTHON PROGRAMMING.

To equip students with skills to explore real-world software development challenges with python programming.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment
3	-	4	5	60	40	40	60

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1	Introduction to Python: The basic elements of python, Data types, Operators, Control Structures, Strings and Input.	4	8
2	Lists and Functions: Functions and scoping, List Operations , Recursion, Global variables, Modules, File I/O.	4	10
3	Testing, Debugging, Exceptions and Assertions: Debugging, Handling Exceptions.	5	12
4	Classes and Object-Oriented Programming: Abstract Data Types and Classes, Inheritance, Encapsulation and Information Hiding	6	12
5	Algorithms and Data structures: Search Algorithms, Sorting Algorithms.	4	12
6	Python MySQL: Environment Setup, Creating new databases, Create Table.	5	12
7	Python - Network Programming, Multithreaded Programming	4	12
8	Graphics and GUI Programming: Drawing using Turtle, Tkinter and Python.	6	12
9	Security: Encryption and Decryption.	4	10

Course Outcome:

At the end of the course the student will be able:

- To do testing and debugging of code written in Python
- To draw various kinds of plots using PyLab.
- To create socket applications in Python.
- To create GUI applications in Python.

List of References:

1. Introduction to Computation and Programming Using Python by John V Guttag (PHI)
2. Core Python Programming by R. Nageswara Rao, Dreamtech
3. Core Python Programming Second Edition by Wesley J. Chun. (PHI)

E-Resource / Web Links:

- <https://www.python.org/>
- <https://docs.python.org/2/library/turtle.html>
- <https://nptel.ac.in/courses/117106113/34>

List of Experiments:

Note: The experiment list provided beneath is for reference only. The course teacher may change/formulate it as per his/her methodology and requirement.

1. Develop a Python Program to Add Two Numbers.
2. Develop a Python Program to find largest element in an array
3. Develop a Python program to print even numbers in a list
4. Develop a Python program to split and join a string
5. Develop a program to Sort Python Dictionaries by Key or Value
6. Develop a Python program to find the sum of all Items in the dictionary.
7. Develop a Python program to sort five integer values.