# SEMESTER - V

## BCA531-PYTHON PROGRAMMING

**Total Teaching Hours For Semester:60**              **No of Lecture Hours/Week:4**

**Max Marks:100**                                                          **Credits:4**

### Course Objectives/Course Description

This course covers the programming paradigms associated with python. It explores the object-oriented programming, Graphical programming aspects of python with help of built in modules.

The objective of this course is to provide comprehensive knowledge of python programming paradigms

### Course Outcome

**CO1**: Demonstrate the use of built-in objects of Python

**CO2:** Demonstrate significant experience with python program development environment

**CO3:** Implement GUI programming concepts.

**Unit-1**                                                        **Teaching Hours:10**

INTRODUCTION TO PYTHON DATA STRUCTURES

Underlying mechanism of Module Execution- Sequences, Mapping and Sets- Dictionaries-Functions - Lists and Mutability- Problem Solving Using Lists and Functions

**Unit-2**                                                        **Teaching Hours:10**

OBJECT ORIENTED PROGRAMMING USING PYTHON AND REGULAR EXPRESSIONS

Classes: Classes and Instances-Inheritance—Polymorphism- Abstract classes-Exceptional Handling- Regular Expressions using "re" module.

**Unit-3**                                                        **Teaching Hours:10**

GUI PROGRAMMING

Introduction-Tkiner module-Root window-Widgets-Button-Label-Message-Text-Menu-Listboxes-Spinbox-Creating tables

**Unit-4**                                                        **Teaching Hours:10**

FILE HANDLING

Writing and Reading Binary Data, Writing and Parsing Text Files, Writing and Parsing XML Files.

**Unit-5**                                                                      **Teaching Hours:9**

INTRODUCTION TO WEB FRAMEWORK
Introduction-Web framework-creating model to add database service-python application shell-Django administration application-input-forms and models

**Unit-6**                                                                     **Teaching Hours:10**

USING NUMPY AND PANDAS
Computation on NumPy-Aggregations-Computation on Arrays-Comparisons, Masks and Boolean Arrays-Fancy Indexing-Sorting Arrays-Structured Data: NumPy's Structured Array. Introduction to Pandas Objects-Data indexing and Selection-Operating on Data in Pandas-Handling Missing Data-Hierarchical Indexing

**Text Books And Reference Books**
1. Wesely J.Chun,*Core Python Application Programming ,*Prentice Hall,third edition 2015.
2. T.R.Padmanabhan, *Programming with Python*,Springer Publications,2016

**Essential Reading / Recommended Reading**

1 Zhang.Y *,An Introduction to Python and Computer Programming,* Springer Publications,2016