JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER

Programme: B.Sc.   **Semester: V**

COMPUTER SCIENCE - V

PYTHON PROGRAMMING

Course Code: 18VCS5   **No. of Hours: 45**

COURSE OBJECTIVES:

- Python Programming covers programming paradigms brought in by Python with a focus on Regular Expressions, List and Dictionaries.
- It explores the various modules and libraries to cover the landscape of Python programming.

LEARNING OUTCOMES:

- Understand and use built -in objects of Python.
- Demonstrate significant experience with the Python program development environment.
- Develop programs using python modules for file handling, regular expressions and GUI.

UNIT I   **(09 HRS)**
Introduction: What is Python, Origin, Features, Comparison with Java, Comments,
Data Types:- Identifiers and Keywords, Integral Types, Floating point types, Strings.
Collection data types: Sequence types, Set types, Mapping types, Iterating and Copying collections.

UNIT II   **(09 HRS)**
Control Structures, Functions and Modules:- Control Structures: Conditional branching, Looping, Custom functions : Names and Docstrings, Argument and parameter unpacking, Accessing Variables in global scope, Lambda functions. Modules and packages, Packages, Overview of Python's Standard library: String Handling, Command Line Programming, Mathematics and Numbers, Algorithms and Collection Data Types, Files, Directory and Process Handling.

UNIT III   **(09 HRS)**
Object-Oriented Programming:
The Object-Oriented Approach, Custom Classes: Attributes and Methods, Inheritance and Polymorphism, Using Properties to Control Attribute Access.
Exceptions and tools: Default Exception Handler, Catching Exceptions, Raising Exceptions, User-Defined Exceptions, Termination Actions.

UNIT IV   **(09 HRS)**
File Handling:
Writing and Reading Binary Data, Writing and Parsing Text Files, Random Access Binary Files.

Regular Expressions: Python's Regular Expression Language: Characters and Character Classes, Quantifiers, Grouping and Capturing, Assertions and Flags, The Regular Expression Module.

UNIT V   **(09 HRS)**
DataBase Programming: SQLDataBases
Introduction to GUI Programming:- Dialog-Style Programs, Main-Window-Style Programs: Creating a Main Window, Creating a Custom Dialog.

REFERENCES

1. Mark Summerfield, Programming in Python 3 A Complete Introduction to the Python Language, Addison-Wesely Reprint 2011
2. Chun, J Wesley, Core Python Programming, Second Edition, Pearson, 2007 Reprint 2010
3. Allen Downey, Think Python, Version 2.0.17, Green Tea Press, Needham, Massachusetts, 2012

COMPUTER SCIENCE V

PYTHON PROGRAMMING LAB

No. of Hours: 45

COURSE OBJECTIVES:

- To build programming logic and thereby developing skills in Programming
- To enable problem solving using Python programming language;
- To be able to do testing and debugging of code written in Python Emphasize the concepts and con- structs rather than on language features.

LEARNING OUTCOMES:

- Enable to build programming logic and thereby developing skills in Programming
- To excel in problem solving using Python programming language.
- To be equipped developers in testing and debugging of code written in Python

PART A
1. To demonstrate the use of List & related functions.
2. To demonstrate the use of tuple, set & related functions.
3. To demonstrate the use of Dictionaries.
4. To implement Command line Argument.
5. To implement a sequential search.
6. To explore string functions.
7. To implement inheritance.
8. To implement Exception Handling.

PART B
1. To implement file operations.
2. To find the most frequent words in a text read from a file.

3. To implement Regular Expressions.
4. Demonstrate the usage of primitive drawing functions in Pygame.
5. Devise a program to create a bouncing ball using Pygame.
6. Demonstrate insert, update & delete Statement in SQLDataBases.
7. Demonstrate select with inner join Statement in SQLDataBases.
8. Design a graphical application using tkinter library.