ADD-CSA-08: Certificate in Python Fundamentals (30 Hours)

Aim

To update and expand skills in Python Programming

Course Objective

- Remember the concepts of python programming

- Understand data types and differences CO2

- Apply CGI programming

Syllabus

Module1: Introduction to Python - Features of Python, Identifiers, Reserved Keywords, Variables, Comments in Python, Input, Output and Import Functions, Operators; Data Types and Operations - int, float, complex, Strings, List, Tuple, Set, Dictionary, Mutable and Immutable Objects, Data Type Conversion; Flow control - Decision Making, Loops-for, range() while, break, continue, pass;

Module 2: Functions- Definition, calling, arguments, anonymous function, recursion, return; Modules & Packages - Built-in Modules, Creating Modules, import statement, Locating, modules, Namespaces and Scope, dir (), reload (), Packages in Python; File Handling- open, close, write, read, methods, rename, delete, directories;

Module 3: Object oriented programming- class, object, method, attribute, destructor, encapsulation, data hiding; Exception handling- built in exceptions, Handling, Exception with arguments, Raising and User defined exceptions, Assertions in Python; Regular expressions – match, search, replace, patterns.

Module 4: Database Programming- Connection, Create, insert, update, delete, commit, rollback,

disconnection, exceptions; Iterators- Data type supports iterators; CGI Programming- HTTP Header, Env variables, Forms, Radio button, Dropdown box, check box, text area, cookies, uploading file.

Course Outcome

- Analyze the concepts of database programming in python

- Evaluate the usage of Python package installer PIP

- Create programs using libraries such as Flask, SQL Alchemy, Pandas, Numpy etc..

References

1. Allen B. Downey," Think Python- How to think like a computer scientist", Second Edition, O'Reilly, 2016.

2. 2. Paul Gries, Jennifer Campbell and Jason Montojo, "Practical Programming: An Introduction to Computer Science using Python 3", Second edition, Pragmatic Programmers, LLC, 2013.

3. Jeeva Jose, "Taming PYTHON By Programming", Khanna Publications, 2017