Certificate Course on Python for Beginners

(05-08-2017 to 21-08-2017)

Syllabus/Curriculum:

Module 1: Introduction to Python

Python Introduction, Technical Strength of Python, Introduction to Python Interpreter and program execution, Using Comments, Literals, Constants,

Module 2: Expressions and Python Statements

Assignment statement, expressions, Conditional statements: if, if-else, if-elif-else; simple programs,

Module 3: Control Flow Statement

Notion of iterative computation and control flow –range function, While Statement, for loop, break statement, Continue Statement, Pass statement, else, assert

Module 4: Python Programming

Introduction to Programming The basic Model of computation, algorithms, flowcharts, Programming Languages, compilation, testing & debugging and documentation Introduction to Python, objects, expressions, variables, IDE.

Module 5: Functions- User Defined

Top-down approach of problem solving, Modular programming and functions, Function parameters, Local variables, the Return statement, , global statement, Default argument values

Module 6: In-Built Functions

Library function-input, eval(),print(), String Functions: count(), find(), rfind(), capitalize(), title(), lower(), upper(), swapcase(), islower(), isupper(), istitle(),

replace(), strip(), lstrip(), rstrip(), aplit(), partition(), join(), isspace(), isalpha(), isdigit(), isalnum(), startswith(), endswith(), encode(), decode(),

Module 5: Numpy, Pandas

NumPy Basics Introduction to NumPy, ndarray, datatypes, array attributes, array creation routines, Array From Existing Data, Array From Numerical Ranges, Indexing & Slicing

Pandas: data frame, dataset uploading, indexing, renaming, add and delete column, series

Module 6: Data Visualization Matplotlib library

Matplotlib is the most popular data visualization library of Python and is a 2D plotting library.

Assessment procedure

The instructor interacted with the students on one-to-one basis and took their doubts in each session. 4 assessments and a final test were taken during the course to strengthen their knowledge of the Python language. Certifications by the institutions were provided to successful participants. Select students would be given exposure to Capstone project sessions and internship opportunities. The candidates will be provided the certificates on the completion of the course provided they successfully pass the written test which will be conducted at the culmination of classes.

Summary with outcomes

Shyam Lal College IQAC & Department of computer Science organized a 30 hours Certificate course in Computer Applications from 05-08-2017 to 21-08-2017. Department of computer Science, Shyam Lal College offers Certificate Course on Python. The duration of the course was 30 hours. A live session was conducted on Microsoft Teams and was attended by students. Total 90 were Students completed this course. The objective of the course was specifically to introduce various concepts of Python programming which would enable the participants to gain basic understanding of the tools and techniques involving in Data Sciences, while also providing

exposure to different applications of Python through projects such as sentiment analysis, detection of fake news, so on. Several useful topics like Python Data Structures, Python Programming Fundamentals, NumPy, Pandas and Matplotlib, Students created python scripts and worked on the data-sets.