

CERTIFICATE COURSE IN PYTHON

Detailed Curriculum

Name of Unit of Qualification	:	Introduction to Python
Duration	:	5 Hours
Topics	:	Introduction to Python, Data types

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To develop knowledge of Python environment and its data types	Python Introduction, Technical Strength of Python, Introduction to PythonInterpreter and program execution, Using Comments, Literals, Constants,Python's Built-in Data types, Numbers (Integers, Floats, Complex Numbers,Real, Sets), Strings (Slicing, Indexing, Concatenation, other operations onStrings), Accepting input from Console, printing statements, Simple 'Python'programs.	5

Name of Unit of Qualification	:	Operators, Expressions and Python Statements
Duration	:	23 Hours
Topics	:	Operators, expressions and Statements

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To understand the operators, expressions and Python statements	Assignment statement, expressions, Arithmetic, Relational, Logical, Bitwiseoperators and their precedence, Conditional statements: if, if-else, if-elif-else;simple programs, Notion of iterative computation and control flow –rangefunction, While Statement, For loop, break statement, Continue Statement, Passstatement, else, assert.	23

Name of Unit of Qualification	:	Sequence Data Types
Duration	:	12 Hours
Topics	:	Sequence data types

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To understand the sequence data types	Lists, tuples and dictionary, (Slicing, Indexing, Concatenation, other operations on Sequence datatype), concept of mutability, Examples to include finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary.	12

Name of Unit of Qualification	:	Functions
Duration	:	23 Hours
Topics	:	Functions, parameters, String functions, Numeric functions, Date & Time functions

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To understand the different inbuilt functions	Top-down approach of problem solving, Modular programming and functions, Function parameters, Local variables, the Return statement, DocStrings, global statement, Default argument values, keyword arguments, VarArgs parameters. Library function-input(), eval(), print(), String Functions: count(), find(), rfind(), capitalize(), title(), lower(), upper(), swapcase(), islower(), isupper(), istitle(), replace(), strip(), lstrip(), rstrip(), split(), partition(), join(), isspace(), isalpha(), isdigit(), isalnum(), startswith(), endswith(), encode(), decode(), String: Slicing, Membership, Pattern Matching, Numeric Functions: eval(), max(), min(), pow(), round(), int(), random(), ceil(), floor(), sqrt(), Date & Time Functions, Recursion.	23

Name of Unit of Qualification	:	File Processing
Duration	:	12 Hours
Topics	:	Concept of File, file operations

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To understand the concept of files and file operations	Concept of Files, File opening in various modes and closing of a file, Reading from a file, Writing onto a file, File functions-open(), close(), read(), readline(),readlines(),write(), writelines(),tell(),seek(), Command Line arguments.	12

Name of Unit of Qualification	:	Scope and Modules
Duration	:	5 Hours
Topics	:	Scope of objects and names, Modules

Performance Criteria (OUTCOME) No.	Contents	Hrs.
To understand the scope of objects, names and modules	Scope of objects and Names, LEGB RuleModule Basics, Module Files as Namespaces, Import Model, Reloading Modules.	5