GOVT. POLYTECHNIC, HAMIRPUR (H.P.)
Lesson Planning

Branch: Computer Engineering
Semester: 6th
Subject: PYTHON PROGRAMMING
Session: Jan 2024
Laboratory: yes
Teacher: Indu Bala

Sr. No.	No of Lectures	Chapter/Unit Description	Detailed contents	Reference Resources	Remarks
1	06	Introduction to Python	Python language – need, features and advantages; Python versions, structure of a typical Python program, code indentation, application areas of Python.	R1,R2	
2	10	Basics of Python Language	Python tokens - identifiers, keywords, operators, delimiters, and literals; variables, naming conventions in Python, Python statements - simple and compound; comments, reading from standard input using input(), writing to standard output using print(), Data types - numbers, strings, tuples, lists, dictionaries, ranges, and sets; mutable and immutable data types, Python numbers: integers, floating-point and complex numbers; numeric literals; String literals - quoted and triple quoted strings, multiline strings, escape sequence, type() function.	R1,R2	
3	10	Python Data Structures	Sequence types - list, tuple, range, string; dictionary, set, list comprehension, set comprehension, dictionary comprehension. String methods - capitalize(), count(), find(), format(), replace(), lower(), upper(), title(); List methods - count(), index(), append(), insert(), remove(), pop(), reverse(), sort(); Set methods - add(), clear(), remove(), discard(), intersect(), copy(), difference(), union(); Dictionary methods - keys(), values(), pop(), items(), clear().	R1,R2	
4	10	Operators and Expressions	Arithmetic operators - addition, subtraction, multiplication, division, truncated division, modulus, exponentiation; arithmetic expressions, comparison operators, logical operators, comparison chaining, bitwise operators, operations on sequences - concatenation, repetition, membership testing, indexing, slicing.	R1,R2	
5	10	Flow Control	if statement and its variants - if, if...else, if...elif...else; loops - while, for; use of else in loops, jump	R1,R2	

			statements - break, continue, pass; with statement, exception handling.		
6	05	Modules, Packages and Functions	Python modules and packages, functions, def statement, parameters, named parameters, default values of parameters, function signatures, variable number of arguments, return statement, lambda expression.	R1,R2	
7	05	Handling Files in Python	Opening a file, file opening modes, read from a file - read(), readline(); writing to a file - write(), writelines(), truncate(), flush(); navigating in a file - seek(), tell(), use of with statement	R1,R2	

Reference Books:

1. Introduction to Computer Science using Python by Charles Dierbach, Wiley Publishers
2. Programming in Python 3: A Complete Introduction to the Python Language by Mark Summerfield, Atlantic Publishers and Distributors
3.https://www.w3schools.com/python

Indu (Indu Bala)

Signature of Teacher with Date

Signature of HOD

GOVT. POLYTECHNIC, HAMIRPUR (H.P.)
Practical Planning

Branch: Computer Engineering **Semester: 6th**

Subject: Python Programming Lab **Session:** Jan 2024

Teacher: Indu Bala **Laboratory:** OS Lab

Sr. No.	No of Practical hours planned	Aim of the Practical	Reference for Procedure/ Writeup	Remarks
1	2	To install and configure Python and IDLE on Windows/ Linux platforms.	R1, R2	
2	2	To practice arithmetic expressions on Python interactive shell.	R1, R2	
3	4	To read data from standard input and print information on standard output.	R1, R2	
4	2	To create variables of various data types and verify them using type() function.	R1, R2	
5	4	To demonstrate various operations and functions on strings.	R1, R2	
6	4	To demonstrate various operations and functions on lists.	R1, R2	
7	4	To demonstrate various operations and functions on sets.	R1, R2	
8	4	To demonstrate various operations and functions on dictionary.	R1, R2	
9	2	To demonstrate various operations on ranges.	R1, R2	
10	4	To demonstrate the working of if statement and its variants.	R1, R2	
11	2	To compute the factorial of a given number using while loop.	R1, R2	
12	2	To find whether a given number is prime or not using while loop.	R1, R2	
13	2	To generate first n terms of a fibonacci series using for loop.	R1, R2	
14	2	To use for loop to manipulate lists.	R1, R2	
15	2	To practice continue, break and pass statements.	R1, R2	
16	4	To demonstrate list comprehension.	R1, R2	
17	2	To demonstrate exception handling mechanism of Python.	R1, R2	
18	2	To demonstrate lambda functions.	R1, R2	
19	4	To demonstrate named parameters and default parameter values of a Python function.	R1, R2	
20	2	To copy the contents of one file into another.	R1, R2	

References:

R1: Lab Manual

R2: https://www.w3schools.com/python

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