

State Institute of Engineering & Technology, Nilokheri
Department of Computer Science & Engineering (AI & ML)

Lesson Plan

Subject Name: IT Workshop (Python)

Code: B23-CSE-207

Year: 2nd

Semester: 3rd

Lecture No.	Unit No.	Topic	COs Covered
1.	Unit I	Introduction to Python, Features of Python	CO1
2.		Execution modes: interactive mode and script mode	CO1
3.		Python character set, use of indentation,	CO1
4.		Python tokens (keyword, identifier, literal, operator, punctuator)	CO1
5.		variables, use of comments	CO1
6.		Knowledge of data types: Number (Integer, Floating point, Complex)	CO1
7.		Knowledge of data types: Number (Integer, Floating point, Complex) Continue...	CO1
8.		Errors: syntax errors, logical errors, and run-time errors	CO1
9.	Unit II	Expressions: Statement, Type conversion, & input/output	CO2
10.		Precedence of Operators	CO2
11.		Arithmetic operators, relational operators, logical operators	CO2
12.		Identity operators (is, is not)	CO2
13.		Expression, evaluation of an expression	CO2
14.		Type-conversion	CO2
15.		Flow of Control, Conditional statements, Iterative Statements	CO2
16.		Strings: Introduction, string operations (concatenation, repetition, membership and slicing)	CO2
17.		Traversing a string using loops	CO2
18.		built-in functions/methods–len(), capitalize(), title(), lower(),	CO2
19.		Upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(),	CO2
20.		islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split()	CO2
21.	Unit III	Array: Access the Elements of an Array, Length of an Array, Adding Array Elements,	CO3

22.		Removing Array Elements, Adds and remove the element at the specified position.	CO3
23.		Lists, Tuples, Dictionary: introduction, indexing, list operations, traversing a list using loops, built-in functions/methods–len(), list(), append()	CO3
24.		extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum().	CO3
25.		Introduction to Python modules: Importing module using 'import ' and using from statement	CO3
26.		importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan())	CO3
27.		random module (random(), randint(), randrange())	CO3
28.		statistics module (mean(), median(), mode())	CO3
29.		Functions and its types (Built-in Functions, Functions defined in Module, User Defined Functions)	CO3
30.		Arguments, default parameters, positional parameters, Function Returning Value(s), Recursion, Scope of a Variable	CO3
31.	Unit IV	Files: Introduction to files, types of files (Text file, Binary file, CSV file), Text file: opening a text file	CO4
32.		file open modes (r, r+, w, w+, a, a+ etc), closing a text file, opening a file using with clause	CO4
33.		writing/appending data to a text file using write() and writelines()	CO4
34.		reading from a text file using read(), readline() and readlines	CO4

Text Books:

1. The Complete Reference Python by Martin C Brown Publication by McGraw Hill.
2. Let us Python by Yashwant Kanetkar

Reference Books:

1. Learning Python (5th Edition) by Mark Lutz. Publication by O'Reilly Media.
2. Programming in Python by Reema Thareja. Publication by Oxford University Press.
3. Python for Everybody: Exploring Data in Python 3 by Charles R. Severance. Publication by CreateSpace Independent Publishing Platform.

Web References:

1. Python Tutorial – W3Schools. Available at: <https://www.w3schools.com/python/>
2. Python Tutorial – GeeksforGeeks. Available at: <https://www.geeksforgeeks.org/python-programming-language/>
3. Programiz Python Tutorial. Available at: <https://www.programiz.com/python-programming>