Lesson Plan

Name of faculty   :   **Devender Kumar** (Programmer)
Discipline   **:** Computer Engineering
Semester   **:** 5th
Subject   :   Python
Lesson Plan Duration   **:**   **20-08-24 to 31-12-24**
Work Load(Lecture/ Practical) per week (in hours): Lectures-03, Practicals – **06**

Week	Theory	Practical
	Topic (including assignment / test)	**Topic**
1st	**Introduction:** Brief History of Python Python Versions Installing Python Environment Variables Executing Python from the Command Line IDLE Editing Python Files Python Documentation Getting Help Dynamic Types Python Reserved Words Naming Conventions	1. Getting started with Python and IDLE in interactive and batch modes
2nd	Basic Python Syntax ▪ Basic Syntax ▪ Comments ▪ String Values ▪ String Methods ▪ The format Method ▪ String Operators ▪ Numeric Data Types ▪ Conversion Functions ▪ Simple Output ▪ Simple Input ▪ The % Method	2. What do the following string methods do? • lower • count • replace

3rd	Language Components
	
	 • Indenting Requirements
	 • The if Statement
	 • Relational and Logical Operators
	 • Bit Wise Operators
	 • The while Loop
	 • break and continue
	 • The for Loop
		3. Write instructions to perform each of the steps below
		          (a) Create a string containing at least five words and store it in a variable.
		          (b) Print out the string.
		          (c) Convert the string to a list of words using the string split method.
		          (d) Sort the list into reverse alphabetical order using some of the list methods (you might need to use dir(list) or help(list) to find appropriate methods).
		          (e) Print out the sorted, reversed list of words.

4th	Collections • Introduction • Lists •	4. Write a program that determines whether the number is prime. What is your favorite number? 24 24 is not prime What is your favorite number? 31 31 is prime
5th	• Tuples • Sets • **Dictionaries**	5. Find all numbers which are multiple of 17, but not the multiple of 5, between 2000 and 2500?
6th	SESSIONAL TEST	SESSIONAL TEST
7th	• **Sorting Dictionaries** • Copying Collections	6. Swap two integer numbers using a temporary variable. Repeat the exercise using the code format: a, b = b, a. Verify your results in both the cases.
8th	Functions • Introduction • Defining Your Own Functions • Parameters • Function Documentation	7. Find the largest of n numbers, using a user defined function largest().
9th	• Keyword and Optional Parameters • Passing Collections to a Function • Variable Number of Arguments • Scope	8. Write a function myReverse() which receives a string as an input and returns the reverse of the string.
10th	• Functions - "First Class Citizens" • Passing Functions to a Function • map • filter • Mapping Functions in a Dictionary • Lambda • Inner Functions • Closures Sessional test	9. Check if a given string is palindrome or not.
11th	Modules • Modules • Standard Modules - sys • Standard Modules - math • Standard Modules - time The dir Function	10. WAP to convert Celsius to Fahrenheit

12th	Exceptions
	                 (06 Periods)
	
	• Errors
	• Runtime Errors
	• The Exception Model
		11.
		     Find the ASCII value of charades

	• Exception Hierarchy • Handling Multiple Exceptions • Raise • assert	
13th	Input and Output • Introduction • Data Streams • Creating Your Own Data Streams • Access Modes • Writing Data to a File • Reading Data From a File • Additional File Methods • Using Pipes as Data Streams Handling IO Exceptions	12. WAP for simple calculator
14th	Classes in Python • Classes in Python • Principles of Object Orientation • Creating Classes • Instance Methods • File Organization • Special Methods • Class Variables • Inheritance • Polymorphism	REVISION & PRACTICE
15th	Regular Expressions • Introduction • Simple Character Matches • Special Characters • Character Classes • Quantifiers • The Dot Character • Greedy Matches • Grouping • Matching at Beginning or End • Match Objects • Substituting • Splitting a String • Compiling Regular Expressions • Flags Sessional Test	REVISION & PRACTICE