Lesson Plan

Name of the Faculty : Mrs. Monu

[Discipline :](#bookmark2) .Computer Engg.

[Semester :](#bookmark3) Vth

**Subject** : Computer Programming Using Python

Lesson Plan Duration : 14weeks (from 15 sep, 2022 to Jan, 2023)

Work Load (Lecture / Practical) per week (in hours): Lectures-03, Practical-02

| **Week** | **Theory** | **Practical** |
| --- | --- | --- |
| **Lecture day** | **Topic(including assignment / test)** | **PracticalDay** | **Topic** |
| **1** | **1** | Introduction to subject (04 Periods)* Brief History of Python
* Python Versions
* Installing Python
* Environment Variables
 | 1st | Practical1 Installation of Python |
| **2** | * Executing Python from the Command Line
* IDLE
* Editing Python Files
 |
| **3** | * Python Documentation
* Getting Help
* Dynamic Types
 |
| **2** | **1** | * Python Reserved Words
* Naming Conventions
 | 2nd | Getting started with Python and IDLE in interactive and batch mode |
| **2** | Basic Python Syntax(04 Periods)* Basic Syntax
* Comments
* String Values
* String Methods
 |
| **3** | * The format Method
* String Operators
* Numeric Data Types
* Conversion Functions
 |
| **3** | **1** | * Simple Output
* Simple Input
* The % Method
* The Print Function
 | 3rd | What do the following string methods do?* lower
* count
* replace
 |
| **2** | Language Components(06 Periods)* Indenting Requirement
* Decision making statement
 |  |
|  |
|  |
| **3** | * Operators
 |  |
|  |
|  |
|  |
|  |
|  |
| **4** | **1** | * Loops
 | 4th | 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 split methods.(d) sort the list into reverse alphabetical order using some of the list methods.(e) print out the sorted, reversed list of words. |
| **2** | * Break and continue
 |
| **3** | Collections (12 Periods)* Introduction
* Lists
* Tuples
 |
|  |  |
| **5** | **1** | * Sets
 | 5th | Write a programme that determines whether the number is prime.What is your favourite number?24 is not primeWhat is your favourite number?31 is prime  |
| **2** | * Dictionaries
* Copying Collections
 |
| **3** | Sessional |
| **6** | **1** | Functions (08 Periods)* Introductions
* Own Functions
 | 6th | Find all numbers which are multiple of 17, but not the multiple of 5, between 2000 and 2500? |
| **2** | * Parameters
* Function Documentation
 |
| **3** | * Keyword and Optional Parameters
* Passing Collection to a Function
 |
| **7** | **1** | * Variable, scope and Number of arguments
 | 7th | Swap two integer numbers using a temporary variable. Repeat the exercise using the code format:a, b =b,a.Verify your result in both the cases. |
|  | **2** | * Functions-"First Class Citizens"
* Passing function to a function
 |
| **3** | * Map
* Filter
 |  |
| **8** | **1** | * Mapping Functions in a Dictionary
* Lambda
 | 8th | Find the largest of n numbers, using a user defined function largest()Write a function my Reverse() which receives a string as an input and returns the reverse of the string |
| **2** | * Inner Functions
* Closures
 |
| **3** | Modules (04 Periods)* Introduction
* Standard Module-sys
* Standard Module-math
 |
| **9** | **1** | * Standard Module-time
* The dir function
 | 9th | Check if a given string is palindrome or not. |
| **2** | Exceptions (06 Periods)* Errors
* Runtime Errors
 |
| **3** | * The Exceptional Model
* Exception Hierearchy
 |
| **10** | **1** | * Handling Multiple Exceptions
* Raise
* Assert
 | 10th | Revision |
| **2** | Revision |
| **3** | Sessional |
| **11** | **1** | Input and Output (04 Period)* Introduction
* Data Streams
* Creating Your own Data Streams
 | 11 | Revision |
| **2** | * Access Modes
* Writing Data to a File
* Reading Data From a File
 |
| **3** | * Additional File Methods
* Using Pipes as Data Streams
* Handling I/O Exceptions
 |
| **12** | **1** | Classes in Python (10 Period)* Classes in Python
* Principles of Object Orientation
 | 12 | WAP to convert Celsius to Fahrenheit |
| **2** | * Creating Classes
* Instance Methods
* File Organization
* Special Method
 |
| **3** | * Class Variables
* Inheritance
* Polymorphism
 |
| **13** | **1** | Regular Expressions (06 Periods)* Introduction
* Simple Character Matches
* Special Characters
 | 13 | Find the ASCII value of charadesWAP for Simple calculator |
| **2** | * Characters Classes
* Quantifiers
* The Dot Character
 |  |
| **3** | * Greedy Matches
* Grouping
* Matching at Beginning or End
 |  |
| **14** | **1** | * Match Objects
* Substituting
 |  |  |
| **2** | * Splitting a String
* Compiling Regular Expressions
* Flags
 | 14 | Revision |
| **3** | Revision |  |  |
|  |  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |