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** | |
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| **Lecture day** | **Topic (including assignment / test)** | **Practical Day** | **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 |  |
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| **3** | * Operators |  |
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| **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 |
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| **5** | **1** | * Sets | 5th | Write a programme that determines whether the number is prime.  What is your favourite number?  24 is not prime  What 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 charades  WAP 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 |  |  |
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