FOUR YEAR UNDER GRADUATE PROGRAM(2024-25)

DEPARTMENT OF MATHEMATICS

COURSE CURRICULUM

Part A: Introduction				
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Class: B.Sc. II/IV/V/VI Semester	Session: 2024-2025	
1	Course Code	**MASEC-2**		
2	Course Title	**Python**		
3	Course Type	**Skill Enhancement Course (SEC)**		
4	Pre-requisite (if, any)	Basic understanding of programming concepts, familiarity with syntax.		
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** ➢ To write python programs , develop a small application .and logic for problem solving. ➢ To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc. ➢ To be familiar with string and its operation. ➢ To develop basic concepts of function and terminology. ➢ To determine the methods to create and develop Python programs by ➢ Utilizing the data structures like lists and tuples.		
6	Credit Value	2 Credits (1C + 1C)	*Credit = 15 Hours – Theoretical learning and = 30 Hours Laboratory or Field learning/Training*	
7	Total Marks	Max. Marks: 50		Min Passing Marks: 20

Part B: Content of the Course		
UNIT	Topics	No. of Hours
I	**(A) Python Basic and IDE** :- Introduction of Python, Installing Python, Running Simple Program, Removing Keys, Traversing a Dictionary . Basic of Python **:**-Data type of Python., Variable declaration rule, Python Identifier and reserved words, Input Output Function Operator of Python, Advanced Python operator(Membership and identity), Comments in Python, Line and Indentation, **(B) Conditional structure** :- if Statements, if -else and statement, Nested if , if-elif-else ladder Loop Control Structure, While loop, For loop, Nested loop, Break Statement, Continue Statement, Pass Statement - Practical 6 ,7& 8 **(C) String and Function** String Basics, Accessing and updating String, Built-in String Methods Function in Python, Declaration and Calling function, Function Argument, Anonymous Functions Python Lists, Accessing and updating List, Basic List Operation, Built-in List Methods, Python Tuple, Accessing and updating tuple, Basic tuple operation, Built-in tuple Method.	**15**

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II	**List of practicals based on Python :-** ▪ Practical 1 - Write a Python program that asks the user for their name and age, then prints a message greeting the user with their name and mentioning their age. ▪ Practical 2 - Define a list with at least three elements of different data types and print the list. ▪ Practical 3- Writeaprogram thattakestwonumberandprint thesumof thesenumbers. ▪ Practical 4 -Writeaprogramtocheckwhethertheinputnumberiseven orodd. ▪ Practical 5- Write a program to compare three numbers and print the largest one. ▪ Practical 6- Writeaprogramtoprintfactors ofagivennumber. ▪ Practical 7-Writeaprogram toprint tableusingwhileLoop. ▪ Practical 8 -Writeaprogramtocreatethe followingPattern ▪ Practical 9- Write a Python program that takes a lowercase string from the user and converts it to uppercase. ▪ Practical 10- Write a function that takes a string input and checks if it is a palindrome or not. ▪ Practical 11- Write a Python program that defines a function to calculate the sum of two numbers. ▪ Practical 12- Create a tuple representing the days of the week and update the last element with "Sunday". Print the updated tuple. ▪ Practical 13- Write a Python program that concatenates two tuples and prints the concatenated tuple. ▪ Practical 14- WAP to create a list of numbers and sort the list in ascending order. ▪ Practical 15- Write a list function to convert a string into a list, as in list (-abc) gives [a, b, c].	30

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Text Books Recommended-

1. Fundamentals of Python first programs, 2nd Edition, Kenneth A. Lambert.
2. Beginning Python from Novice to Professional, Third Edition, Magnus Lie Hetland

Reference Books Recommended-

3. Python for Science and Engineering, Hans-PetterHalvorsen.
4. Python Programming: An Introduction to Computer Science, Third Edition, John Zelle.
5. Introduction to Scientific Computing in Python, Continuum Analytics and Robert Johansson.

E-Recourses:

https://onlinecourses.nptel.ac.in
https://epgp.inflibnet.aci.in
https://swayam.gov.in
https://www.mooc.org

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	50 Marks
Continuous Internal Assessment (CIA):	15 Marks
End Semester Exam (ESE):	35 Marks

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Continuous Internal Assessment (CIA): (By Course Coordinator)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks - 15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Laboratory / Field Skill Performance: On spot Assessment A. Performed the Task based on learned skill - 20 Marks B. Spotting based on tools (written) – 10 Marks C. Viva-voce (based on principle/technology) - 05 Marks	Managed by Coordinator as per skilling

Name and signature of convener & members of CBOS-