

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)	<p>This Course will enable the students to:</p> <ul style="list-style-type: none"> ➤ 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)	<i>Credit = 15 Hours – Theoretical learning and = 30 Hours Laboratory or Field learning/Training</i>
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20

Part B: Content of the Course

UNI T	Topics	No. of Hours
I	<p>(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,</p> <p>(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</p> <p>(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.</p>	15

II	<p>List of practicals based on Python :-</p> <ul style="list-style-type: none"> ▪ 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 - Write a program that takes two numbers and prints the sum of these numbers. ▪ Practical 4 - Write a program to check whether the input number is even or odd. ▪ Practical 5 - Write a program to compare three numbers and print the largest one. ▪ Practical 6 - Write a program to print factors of a given number. ▪ Practical 7 - Write a program to print a table using while loop. ▪ Practical 8 - Write a program to create the following pattern ▪ 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
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Part C - Learning Resource
Text Books, Reference Books, Other Resources
<p>Text Books Recommended-</p> <ol style="list-style-type: none"> 1. Fundamentals of Python first programs, 2nd Edition, Kenneth A. Lambert. 2. Beginning Python from Novice to Professional, Third Edition, Magnus Lie Hetland
<p>Reference Books Recommended-</p> <ol style="list-style-type: none"> 3. Python for Science and Engineering, Hans-Petter Halvorsen. 4. Python Programming: An Introduction to Computer Science, Third Edition, John Zelle. 5. Introduction to Scientific Computing in Python, Continuum Analytics and Robert Johansson.
<p>E-Recourses:</p> <p>https://onlinecourses.nptel.ac.in https://epgp.inflibnet.aci.in https://swayam.gov.in https://www.mooc.org</p>

PART -D: Assessment and Evaluation
<p>Suggested Continuous Evaluation Methods:</p> <p>Maximum Marks: 50 Marks</p> <p>Continuous Internal Assessment (CIA): 15 Marks</p> <p>End Semester Exam (ESE): 35 Marks</p>

(Dr. P. K. Sahu)

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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-








