TEACHING PLAN 2025-26
Subject : **Computer Science**
Paper Name and Course Code: **: Programming in Python**
Credit/ total no. Of classes : 4(3+1)
Period: January-June

Lecture No.	Faculty	Topic	Mode of Content Delivery	Teaching Aid	Assessment method
1	P.P.D.Sarma	Planning the Computer Program Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation	Class Room Teaching/slides	Computer system LCD Projector	
2	P.P.D.Sarma	Techniques of Problem Solving Flowcharting, decision table, algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming.	Class Room Teaching/slides	Computer system LCD Projector	
3-4	P.P.D.Sarma	Overview of Programming Structure of a Python Program, Elements of Python	Class Room Teaching/slides	Computer system LCD Projector	
5-10	P.P.D.Sarma	Introduction to Python Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bit wise operator	Class Room Teaching/slides	Computer system LCD Projector	Unit Test
11-15	P.P.D.Sarma	Creating Python Programs Input and Output Statements, Control statements (Looping- while Loop, for Loop, Loop Control, Conditional Statement- if...else, Difference between break, continue and pass).	Class Room Teaching/demonstration	Computer system LCD Projector	
16-20	P.P.D.Sarma	Structures Numbers, Strings, Lists, Tuples, Dictionary, Date & Time, Modules, Defining Functions, Exit function, default arguments.	Class Room Teaching/ demonstration		
21-30	P.P.D.Sarma	Introduction to Libraries in Python NumPy, Matplotlib, OpenCV, Tkinter.	Class Room Teaching/ demonstration	Computer system LCD Projector	
30-35	P.P.D.Sarma	Introduction to database driven program, Database Connection, Database Operations: INSERT, READ, UPDATE, DELETE, COMMIT AND ROLLBACK.	Class Room Teaching/ demonstration	Computer system LCD Projector	
36-40	P.P.D.Sarma	Revision of all units	Class Room Teaching/ demonstration	Computer system LCD Projector	

Practical

session	Faculty	Experiment	Mode of content delivery	Teaching Aid	Assessment method
SESSION1	Rita Sinha	1. Write a menu driven program to convert the	Demonstration	Computer system	Skill test

		given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice			
SESSION 2		2. WAP to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria : Grade A: Percentage >=80 Grade B: Percentage>=70 and <80 Grade C: Percentage>=60 and <70 Grade D: Percentage>=40 and <60 Grade E: Percentage<40	Demonstration	Computer system	
SESSION 3-7		3. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user. 4. WAP to display the first n terms of Fibonacci series. 5. WAP to find factorial of the given number. 6. WAP to find sum of the following series for n terms: 1 – 2/2! + 3/3! - - - - - - n/n! 7. WAP to calculate the sum and product of two compatible matrices.	Self learning/ tutorial	Computer system	
SESSION 8		1. Write a menu-driven program to create mathematical 3D objects I. curve II. sphere III. cone IV. arrow V. ring VI. Cylinder.	Demonstration	Computer system	
SESSION 9-20		2. WAP to read n integers and display them as a histogram. 3. WAP to display sine, cosine, polynomial and exponential curves. 4. WAP to plot a graph of people with pulse rate p vs. height h. The values of p and h are to be entered by the user. 5. WAP to calculate the mass m in a chemical reaction. The mass m (in gms) disintegrates according to the formula m=60/(t+2), where t is the time in hours. Sketch a graph for t vs. m, where t>=0. 6. A population of 1000	Self learning/ tutorial	Computer system	

		bacteria is introduced into a nutrient medium. The population p grows as follows: P(t) = (15000(1+t))/(15+ e) where the time t is measured in hours. WAP to determine the size of the population at given time t and plot a graph for P vs t for the specified time interval. 7. Input initial velocity and acceleration, and plot the following graphs depicting equations of motion: I. velocity wrt time (v=u+at) II. distance wrt time (s=u*t+0.5*a*t*t) III. distance wrt velocity (s=(v*v-u*u)/2*a)			