



Indraprastha College for Women University of Delhi

Course Name:	B.A. (PROGRAM)
Paper Title:	Programming Fundamentals using Python
Unique Paper Code:	2342201102
Semester:	I
Faculty(s):	Dr. Manoj Kumar
Year:	2025

Work Plan			
Unit No.	Learning Objective	Lecture No.	Topics to be Covered
I.	Introduction to Python Programming	1	Problem solving strategies
		2	Structure of a Python program, Syntax and semantics;
		3	Python interpreter/shell, indentation
		4	Executing simple programs in Python
II.	Creating Python Programs	5	Basic of Python Programming: Introduction, Python Character Set, Token, Python Core Data Type, The print() Function,
		6	The print() Function with end Argument, Assigning Value to a Variable
		7	Scope of a Variable, Multiple Assignments, Writing Simple Programs in Python
		8	The input () Function, The eval() Function, Formatting Number and Strings, Python Inbuilt Functions
		9	Operators and Expressions, Arithmetic Operators, Unary Operators, Binary Operators, Operator Precedence
		10	Operator Associativity, Changing Precedence and Associativity of Arithmetic Operators, Translating

		11	The Compound Assignment Operator Translating Mathematical Formulae into Equivalent Python Expressions
		12	Bitwise operator, the compound assignment operator
		13	Decision Statements: Introduction, Boolean Type, Boolean Operators, Using Numbers with Boolean Operators,
		14	Using String with Boolean Operators, Boolean Expressions and Relational Operators
		15	Decision Making Statements, The if Statements, The if-else Statement, Nested if Statements, Multi-way if-elif-else Statements, Conditional Expressions
		16	Loop Control Statements: Introduction, The while Loop, Details of while Loop, Flowchart for while Loop
		17	Some More Programs on while Loop, The range() Function,
		18	The for Loop, Nested Loops,
		19	Some More Programs on Nested Loops, The break Statement, The continue statement
III.	User Defined Functions	20	Defining functions
		21	Defining functions
		22	Defining functions
		23	passing arguments and returning values
		24	passing arguments and returning values
		25	passing arguments and returning values
		26	passing arguments and returning values
		27	default arguments
		28	default arguments
IV.	Built-in data structures: Strings, Lists, Tuples, Sets, Dictionaries; their built-in functions, operators and operations	29	Strings :Introduction, The str class, Basic Inbuilt Python Functions for String, The index[] Operator,

		30	Traversing String with for and while Loop, Immutable Strings
		31	The String Operators
		32	String Operations
		33	Lists: Introduction Creating Lists Accessing the Elements of a List, Negative List Indices
		34	List Slicing [Start: end], List Slicing with Step Size Python Inbuilt Functions for Lists, The List Operator
		35	List Comprehensions List Methods List and Strings
		36	Splitting a String in List Passing List to a Function Returning List from a Function
		37	Tuples
		38	Tuples
		39	Sets
		40	Dictionaries:

Unit	Contents/ Syllabus
I.	Introduction to Python Programming Problem solving strategies; Structure of a Python program; Syntax and semantics; Python interpreter/shell, indentation; Executing simple programs in Python
II.	Creating Python Programs Identifiers and keywords; literals, numbers, and strings; Operators and expressions; Input and output statements; control structures (conditional statements, loop control statements, break, continue and pass), Errors and exception handling
III.	User Defined Functions Defining functions, passing arguments and returning values, default arguments
IV.	Built-in Data Structures Strings, Lists, Tuples, Sets, Dictionaries; their built-in functions, operators and operations
S. No.	Name of Authors/Books/Publishers
1.	Kamthane, A. N., & Kamthane, A.A. <i>Programming and Problem Solving with Python</i> , McGraw Hill Education. 2017.
2.	Balaguruswamy E., “ <i>Introduction to Computing and Problem Solving using Python</i> ”, 2 Edition, McGraw Hill Education, 2018
3.	Taneja, S., Kumar, N. <i>Python Programming- A modular Approach</i> . Pearson Education India, 2018.

Paper Components			
Credits	Lecture (L)	Tutorial (T)	Practical (P)
4	3	0	1
Assessment Scheme			
S.No.	Component	Marking Scheme	Total Marks
1.	Internal Assessment <ul style="list-style-type: none"> • Assignment/Quiz/Project/Presentation • Class Test • Attendance 		30
		12	
		12	
		6	
2.	Continuous Assessment (Tutorial) <ul style="list-style-type: none"> • Activity 1 • Activity 2 • Attendance 		NA
3.	Practical <ul style="list-style-type: none"> • Continuous Assessment • End Term Written/Practical Exam • Viva 		40
		10	
		20	
		10	
4.	End Semester Examination		90