Dharmsinh Desai Univesity - Department of MCA

Lecture Plan - 2023-24 (Odd)

Subject: MCA - 331 - Python Programming Semester - 3

Unit/Sr. No.	Topic	No. of lectures planned
1	**Elements of Python Programming**	**7**
	Introduction to Python Programming Environment, Writing and Executing	1
	Basic Python Program, Input & Output statements.	
	Data types: Built-in Types, str, bytes, Literals, type() function.	1
	Operators: Arithmetic, Assignment, Relational, Logical, Boolean, Bitwise,	1
	Membership, Identity. Command line arguments.	1
	Control Statements: if, else, elif, while, for, break, continue, pass, assert, return.	3
2	**Sequences**	**5**
	List: create, update, delete elements, list methods, indexing and slicing.	2
	Tuple: create, basic operations, functions to process tuple.	1
	Dictionary: create, update, delete elements, dictionary methods.	2
3	**Functions**	**5**
	Difference between Function and Method, Create and Use Function	1
	Return Multiple Results from Function, Pass by Object Reference.	1
	Arguments: Positional, Keyword, Default, Variable length.	1
	Local and Global Variables, Global Keyword, Passing group of Elements to Function.	1
	Anonymous Functions: Using Lambdas with: filter(), map() and reduce()	1
4	**Obect Oriented Programming**	**5**
	Create Class and its Objects, Self variable,	1
	Constructor, Instance methods, Class methods, Static methods.	1
	Inheritance: Constructors in Inheritance, Methods,	2
	Overriding Super Class Constructors and super(), Method Overloading and Overriding.	
	Abstract class, Interface.	1
5	**Exception Handling**	**3**
	Types of errors, Exceptions, Handling exceptions	1
	Types of exceptions, Assert and Except statements	1
	User defined exception	1
6	**Database Interfacing**	**4**
	Introduction, Working with MySQLdb module, Establish connection,	1
	Create database and table	1
	CRUD operations	1
	Invoke stored procedure.	1
7	**Multithreading**	**4**
	Introduction: single and multi tasking, Difference between Process and Thread.	1
	Create Thread: Without Using a Class, Using a Thread Class.	1
	Thread Class Methods, Single Tasking Using a Thread, Multitasking Using Multiple Threads.	1
	Thread Synchronization, Communication between Threads.	1
8	**Python in Scientific Computing**	**6**
	numpy arrays: zeros(), ones(), reshape(), hstack(), vstack(), arange(), linspace(),	1
	logspace(), asarray(), dot(), matmul(), indexing and slicing.	1
	pandas: Work with Series and Dataframe: create, delete rows and columns,	2
	index and select data, handle missing data, iterate over rows and columns	1
	matplotlib: Plotting- bar graph, histogram, pie chart, line graph.	1
9	**Python DJango**	**4**
	Introduction, Setup environment, Create project,	1
	Life Cycle, Admin Interface, Create Views,	1
	Models, Page Redirection, Process Form.	2
TOTAL		**43**