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Certificate in Python Programming

Course Curriculum

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Course Overview: *This course will teach students how to program using. Python At the end of the course, graduates will be able to take on tasks and job opportunities as Python Programmer.*

WEEK	MODULE	TOPIC	HOURS	OBJECTIVES
Week 1	1. Python Basics and Control Structures	1. What is Python 2. Why Python 3. Areas of Applications 4. Installing Python and VsCode 5. Python Interpreter 6. First Python Program and Running it 7. Some Plugins for Vscode 8. Commenting Your code 9. Some more simple Python code 10. Variables, Variable Names, Data Types 11. Strings 12. Escape Sequence 13. Formatted String 14. String Indexing 15. Slicing String 16. Common String Methods 17. Concantenation and Repetition 18. Numbers 19. Working with Numbers and Operator Precedence 20. Reading Input from Keyboard 21. Building a Simple Calculator 22. Type Conversion 23. Comparison Operator 24. Conditional Statements 25. FizzBuzz Program 26. Ternary Operators	6	**At the end of this Module, you will understand:** *the basics of Python , install the tools you need to wite and run your python programs;* *Write your first python program, Variables and Data types;* *Working with Strings and Numbers, Use control Structures;* *to manage the flow of your programs, Use python Iterables;* *Read Input from the keyboard, and you are going to write some fairly complex python code.*

		27. Logical Operators		
		28. Short-Circuit Evaluation		
		29. Lists		
		30. Tuple		
		31. Set		
		32. Dictionaries		
		33. Loops (For Loops)		
		34. Loops (For Else)		
		35. Loops (Nested Loops)		
		36. Loops (While)		
		37. Infinite		
		38. Buildong a Guess game		
		39. Building a car game		
WEEK	**MODULE**	**TOPIC**	**HOURS**	**OBJECTIVES**
Week 2	**2: Functions and Modules**	1. Introduction to Function and Modules 2. Some out of the box functions 3. Arithmetic Operators 4. Assignment Operator 5. Math Module 6. Floor and Modulus 7. Random Module 8. Date Module 9. Age Calculator Program 10. Eldest Brother among 3 siblings programs 11. Creating your own functions 12. Python Scope 13. Python Lambda 14. Python RegEx 13. Exception Handling 14. File IO - Read files 15. File IO - Write files 16. File IO - Delete Files	**6**	***At the end of this Module, you will learn about functions, use more in-built functions in Python, create your own functions and use them.***

WEEK	MODULE	TOPIC	HOURS	OBJECTIVES
Week 3	3: Libraries and GUI	1. Introduction to OOP		
		2. Classes and Object		
		3. Inheritance	6	*At the end of this Module, you will be introduced to the concept of OOP, you will be introduced to using popular libraries and You will be building a GUI Program*
		4. Introducing Pip and Pypi		
		5. Introducing NumPy		
		6. Working with NumPy I		
		7. Working with NumPy II		
		8. Introducing Tkinter		
		9. Python GUI I		
		7. Python GUI II		
		8. Python GUI III		
WEEK	MODULE	TOPIC	HOURS	OBJECTIVES
Week 4	4. Wrap - up and projects	1. Python for Web (Django) : (Optional)	6	
		2. Python for Data Science: (Optional)		
		3. Project		
		CAT1 to 3		
		END OF COURSE EXAMS		
		Team Project		
		TOTAL	24	