



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C.Nagammal Campus

S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Industry Certified Value Added Course on

“Object Oriented Programming in Python From Fundamentals to Excellence”

05-01-2025 to 10-01-2025 (2025 – 2026 EVEN)

COURSE OBJECTIVES

- Build strong Python basics required to solve coding problems efficiently.
- Convert logic into reusable and optimized functions.
- Understand OOP concepts required for real-world and interview problems
- Master advanced OOP concepts often asked in placements
- Solve placement-level problems using Python data structures with OOP logic.
- Prepare students for real placement tests and coding rounds

UNIT 1: Python Fundamentals (10 Hours)

Python syntax-input/output handling Variables-data types-type casting Conditional statements (if, elif, else) -Loops (for, while) -Time complexity basics (Big-O intuition).

UNIT 2: Functions and Recursions (10 Hours)

Functions and return values-Parameters and arguments-Recursion (basic to intermediate) - Python built-in functions for optimization

UNIT 3: Core Object Oriented Programming Concepts (10 Hours)

Classes and Objects-Constructors (`__init__`)-Instance vs class variables-Methods and object interaction.

UNIT 4: OOPS Concepts in Advance(10 Hours)

Inheritance (single, multilevel)-Polymorphism-Encapsulation and abstraction-Method overriding-`super()` keyword

UNIT 5: Data Structures Using OOP Approach (10 Hours)

Lists-tuples- sets- dictionaries -Stack and Queue implementation using classes -Searching and sorting logic -Problem optimization techniques

Total: 50 Hours

COURSE OUTCOMES

After successful completion of the course, the students will be able to

CO. No.	Course Outcome	Knowledge Level
CO1	Apply Python syntax, variables, and data types to write correct programs for competitive coding problems.	K3 - Apply
CO2	Analyze problem-solving efficiency by selecting and applying suitable Python built-in functions for optimization.	K4 - Analyze
CO3	Apply the use of instance variables and class variables appropriately while developing object-oriented solutions.	K3 - Apply
CO4	Analyze class hierarchies to implement appropriate types of inheritance for code reuse and extensibility	K4 - Analyze
CO5	Apply problem optimization techniques to improve the efficiency of data structure-based solutions	K3 - Apply

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO1:

Professional Skills: The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexity.

PSO2:

Problem - Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.

CO - PO MAPPING

Course Name	CO. No.	POs											PSOs	
		1	2	3	4	5	6	7	8	9	10	11	1	2
VAC - Python	CO1	M	L	L	-	-	L	-	M	M	M	L	L	M
	CO2	M	L	L	-	-	L	-	M	M	M	L	L	M
	CO3	M	L	L	-	-	L	-	M	M	M	L	L	M
	CO4	M	L	L	-	-	L	-	M	M	M	L	L	M
	CO5	M	L	L	-	-	L	-	-	M	M	L	L	M

H - High, M - Moderate, L - Low

SDG MAPPING

Object Oriented Programming in Python from Fundamentals to Excellence

VAC PYTHON	SDGs																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	-	-	-	√	-	-	-	√	√	-	-	-	-	-	-	-	-



Trainer

Er.M.Rajesh Kannan,
CO-Founder & CEO,
Paruvaththe Payir Sel,
Bangalore.



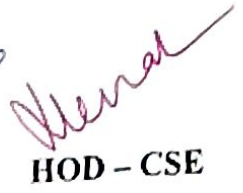
VAC Course Incharges

Ms.S.Athilakshmi, AP-CSE
Ms.G.A.Muthuchelvi, AP-CSE
Ms.I.Shalom Priscilla, AP - CSE



VAC Coordinators

Ms.S.Athilakshmi, AP-CSE
Ms.S.Archana Devi, AP-CSE



HOD - CSE

Dr.A.Meenakshi
Prof. & Head