










## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



**MALLA REDDY COLLEGE OF  
ENGINEERING AND TECHNOLOGY**  
(AUTONOMOUS INSTITUTION - UGC GOVT. OF INDIA)  
(AFFILIATED TO JNTU, APPROVED BY AICTE, NBA & NAAC - 'A' GRADE - ISO 9001:2015)



**DEPARTMENT OF  
ELECTRONICS & COMMUNICATION ENGINEERING**  
ORGANISING  
A THREE DAY STUDENT DEVELOPMENT PROGRAM ON  
**ADVANCED PYTHON PROGRAMMING**  
IN ASSOCIATION WITH **CODE TANTRA**  
For II Year Students  
15-17 October, 2024

**CODETANTRA** | 

<b>Dr. VSK Reddy</b> Director	<b>Dr. S. Srinivasa Rao</b> Principal	<b>Dr. T. Venugopal</b> Dean Students Welfare	<b>Dr. Mallikarjuna LK</b> HOD	Faculty Coordinators <b>Dr R Chinna Rao</b> <b>Mr E Mahender Reddy</b> <b>Ms N Saritha</b>
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**A THREE-DAY STUDENT DEVELOPMENT PROGRAM ON  
ADVANCED PYTHON PROGRAMMING  
IN ASSOCIATION WITH CODE TANTRA  
OCTOBER 15<sup>th</sup> -17<sup>th</sup> 2024**



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Maisammaguda, Dhulapally (Post Via. Kompally), Secunderabad – 500100, Telangana State, India.





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**OCTOBER 15<sup>th</sup> -17<sup>th</sup> 2024**

Department of ECE has organized a **Three-Day workshop on “ADVANCED PYTHON PROGRAMMING”** in association with **CODE TANTRA** from **15<sup>th</sup> – 17<sup>th</sup> October,2024** for II-year ECE Students.

### **Objective & Highlights:**

The main objective of Python Programming training is to cover the fundamentals, advanced concepts, and practical applications of Python. The students will be equipped to write efficient Python code, manipulate data structures, develop object-oriented applications, and handle errors effectively. The workshop will help the students' master fundamentals of python, effectively use python for seamless data management and processing.

The topics discussed are as follows:





# TABLE OF CONTENT

## **Topic 01: Introduction**

- Python Introduction
- History of Python
- Features of Python
- Python versions
- Setting up Python

## **Topic 02: Variables and Tokens**

- Python Identifiers
- Python Data Types
- Python Comments
- Operators
- Keywords
- Operators Precedence
- Type conversion

## **Topic 03: Input/Output**

- I/O in Python
- Input functions- input()
- Output functions-print()
- Expressions

## **Topic 04: Operators**

- Arithmetic Operators
- Comparison Operators
- Assignment Operators
- Bitwise Operators
- Logical Operators
- Membership Operators
- Identity Operators
- Operators Precedence



### **Topic 05: Control statements**

- Conditional Statements
- Iterative Statements
- unconditional Statements

### **Topic 06: Numbers**

- Decimal Systems
- Binary Systems
- Octal Systems
- Hexadecimal Systems
- Conversion between Number Systems

### **Topic 07: Lists**

- Python lists
- List methods
- List Operations
- Built-in List Functions
- List Comprehensions

### **Topic 08: Strings**

- Python String
- String Concatenation
- String Comparison
- Substring Operations
- String Buffer
- String Builder
- toString method
- Built-in String Methods
- String Formatting

### **Topic 09: Tuples**

- Python Tuples
- Tuple Methods
- Tuple Operations
- Tuple unpacking
- Built-in Tuple Functions



## **Topic 10: Dictionary**

- Python Dictionary
- Dictionary methods
- Dictionary Operations
- Built-in Dictionary Functions
- Dictionary comprehensions

## **Topic 11: Sets**

- Python Sets
- Set methods
- Set Operations
- Built-in Set Functions
- Sets Comprehensions

## **Topic 12: Functions**

- Python Functions
- Parameters and Arguments
- Keyword Arguments
- Default Arguments
- Variable-length Arguments
- Anonymous Functions
- Fruitful Functions
- Global and Local Variables
- Recursion
- Decorators
- Generators and Iterators
- Closures and Higher-Order Functions

## **Topic 13: Modules**

- Creation modules
- Import Statements
- From import statements
- Module alias
- Namespaces



### **Topic 14: Python Packages**

- Creation packages
- Importing packages
- PIP
- Installing packages via PIP

### **Topic 15: File Handling**

- Opening Files
- Reading Files
- Writing Files
- File Operations

### **Topic 16: OOPs Introduction**

- Python OOP's Concepts
- Naming Convention
- Object and Class
- Class Attributes

### **Topic 17: Methods**

- Methods
- Special Methods
- Self Variable

### **Topic 18: Keywords and Constructor**

- Constructor
- Default argument in Constructors
- Static keyword
- this Keyword

### **Topic 19: Inheritance**

- Types of Inheritance
- Method Resolution Order(MRO)

### **Topic 20: Polymorphism**

- Python Polymorphism
- Operator Overloading
- Method Overriding





### **Topic 21: Abstraction**

- Abstraction
- Abstract Classes

### **Topic 22: Access Modifiers and Encapsulation**

- Encapsulation
- Access Modifiers
- Public
- Private
- Protected

### **Topic 23: Polymorphism**

- Python Polymorphism
- Method Overloading
- Method Overriding
- Super keyword

### **Topic 24: Types of Errors**

- Syntax errors
- Runtime errors
- Logical errors

### **Topic 25: Errors and Exceptions Handling**

- Python Exceptions Handling
- Types of Exceptions
- Try/Except/Else/Finally block
- Try-finally clause
- Raising Exceptions
- Custom Exception

### **Topic 26: Standard Library**

- Math Module
- String Pattern Matching
- Dates and Times

### **End of Table of Content**

*CodeTantra reserves the right to amend the training content if required without any prior notice.*



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