



ENGINEERING STAFF COLLEGE OF INDIA

(Autonomous Organ of The Institution of Engineers (India))



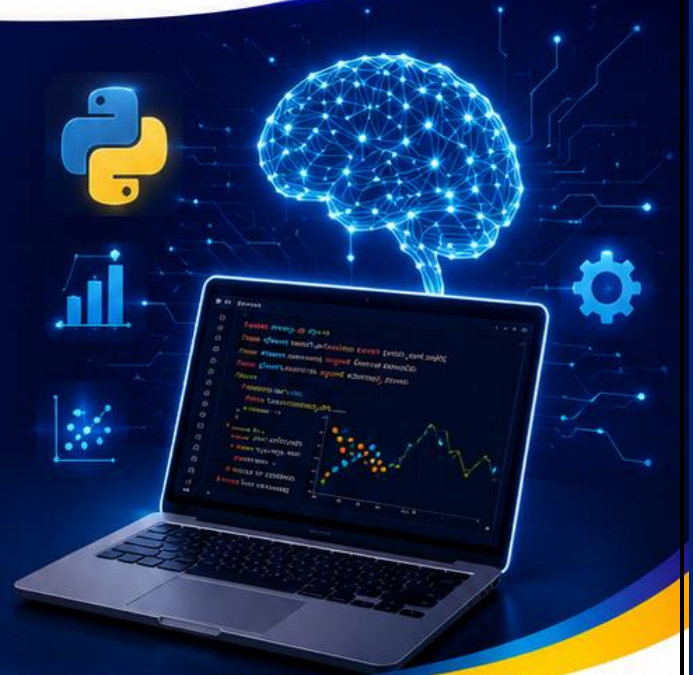
Old Bombay Road, Gachibowli,
Hyderabad – 500 032, Telangana, India

ISO 9001:2015 Certified, AICTE & CEA Recognized Institution

PROFESSIONAL DEVELOPMENT PROGRAM

DEVELOPING ML AND AI APPLICATIONS WITH PYTHON

Learn, Build and Deploy
Intelligent Solutions with **Python**



21 – 26
Sept 2026



ESCI
Campus



Hands-on
Practical Oriented



Industry-Relevant
Skills



Real-world
AI/ML Projects

EMPOWERING ENGINEERS. ENABLING INNOVATION.



FOR DETAILS, PLEASE CONTACT >



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www.escihyd.org

(An ISO 9001:2015 Certified, AICTE & CEA Recognized Institution)

Centre for Promotion of Professional Excellence

Introduction

The training program “**Developing ML and AI Applications with Python**” is designed to provide practical knowledge of building intelligent applications using Python. Participants will learn the fundamentals of **Machine Learning (ML)**, **Artificial Intelligence (AI)**, **data processing**, and **predictive modeling**. The program provides hands-on exposure to Python libraries and tools used for developing ML and AI solutions. Participants will learn to build, train, evaluate, and apply machine learning models to real-world problems. The training enables professionals to develop practical AI-driven applications for automation, analytics, and smarter decision-making.

Objective

- To provide a strong understanding of Artificial Intelligence (AI), Machine Learning (ML), and their practical applications.
- To develop programming skills in Python for data processing, analysis, and machine learning applications.
- To provide hands-on experience with popular Python libraries and frameworks for developing AI and ML models.
- To enable participants to build, train, evaluate, and optimize machine learning models for real-world problems.
- To equip participants with skills to develop AI-driven solutions for prediction, automation, analytics, and intelligent decision-making.

Course Content

Python Programming for Data Science

- Python Basics
- Python as Object Oriented Language
- Python for Functional Programming
- Python + GIT (Version Management)
- Python package managers and Configuration
- Python Libraries for Data Analytics
- Python for Geo –spatial Analytics
- Python for Data Visualization
- Python Dashboards and Story telling
- Python for Optimization
- Python for Operational Research and Statistical Analysis
- Testing with Python

Machine Learning and Deep Learning

- Fundamentals of ML
- ML Workflow Data Preprocessing
- Feature Engineering, Model evaluation (accuracy, precision, recall, F1)
- Dimensionality Reduction
- Clustering
- Gradient Based Boosting
- Regression (Linear, Logistic)
- Decision Trees, Random Forests Model tuning (Grid Search, Cross-validation)

- Simulation-based predictions
- Monte Carlo Simulation
- Agent-based modeling
- Neural Networks: Concepts & Implementation-
- Convolutional Neural Networks (CNNs)- Object detection & classification
- Natural Language Processing (Tokenization, Embedding)
- Recurrent Neural Networks
- Attention Based Networks, Transformers and Large Language Models
- Model explain ability (SHAP, LIME)
- Reinforcement Learning Basics Markov Decision Processes
- Q Learning , TD Learning, SARSA
- Rule-based Expert Systems
- Fuzzy Logic for ambiguous situations
- ML integration in decision workflows
- Transfer Learning
- Generative AI
- Generative Adversarial Network
- Model Deployment

Methodology

Methodology of the programme includes class room sessions with Lecture / Discussion with Hands- on Practical, with tools, audio visual aid, bench marked video shows, Chalk & Talk sessions, group discussions, case studies, debates, sharing of experiences etc. All the sessions will be interactive demanding active participation from all the members.

Target Participants

- Software Developers, Python Developers, Data Scientists, Data Analysts.
- IT Professionals, Data Engineers, R&D Engineers, Technical Project Managers, Engineering Professionals working in PSUs, Power Sector, Defence, Govt. Departments & Research Organizations
- Faculty & Researchers, and other technology professionals interested in developing practical ML and AI applications using Python.

Course Fee

₹ **35,000/- (Residential Fee)** per participant. Fee includes Single / Double AC accommodation as per the availability, course material, course kit, Breakfast. Lunch, Dinner, Tea / Coffee and Snacks during the actual days of the training program.

Course Director

Mr. Syed Azgar , MBA(IT), RHCE, MCSA,
Sr Faculty & Head IT,
Information Technology Division,

GST @18% is to be paid extra and above the training fee as training. **PAN Card No.** AAATT3439Q. **GST No:** 36AAATT3439Q1ZV, **HS No.:** 999293 (under commercial training or coaching services – clause 65(105) (ZC) of Finance act – 1994).

Programme fee is to be paid in in favour of **“THE INSTITUTION OF ENGINEERS (INDIA) – ENGINEERING STAFF COLLEGE OF INDIA”** by **Electronic Fund Transfer (EFT)** to ESCI – Axis Bank A/c No. **912010049234564** with The Axis Bank Ltd, Old Mumbai Hwy, Cyberhills Colony, P Janardhan Reddy Nagar, GachiBowli Hyderabad-500032 by NEFT/ RTGS/ IFSC Code No. UTIB 0000733 – MICR No.500211020. **While using EFT method of payment, please ensure to communicate us your company name, our invoice reference and programme title.**

Registration

To **register manually** please send your nominations giving details of name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to : it@escihyd.org

A Certificate of participation will be awarded to each participant on conclusion of the programme.

Glimpses of our Recent Programmes



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