CATR
Centre for Advanced Training and Research

Online Training Program on

Python for Data Analytics and Machine Learning

From Code to Insights: Master Data Analytics & Machine Learning

🎓 8 Week Program 📅 Starts 08June to 31 July 2026
⏰ 9:00–11:00 AM IST 🔁 Mon–Wed–Fri

Global Time: 🇦🇪 Dubai – 7:30 AM | 🇸🇦 KSA – 6:30 AM |
🇬🇧 London – 4:30 | 🇺🇸 New York – 11:30 PM | 🇸🇬 Singapore – 11:30 AM

Resource Person

Prem Sagar
Assistant Professor,
St Joseph's University, Bangalore

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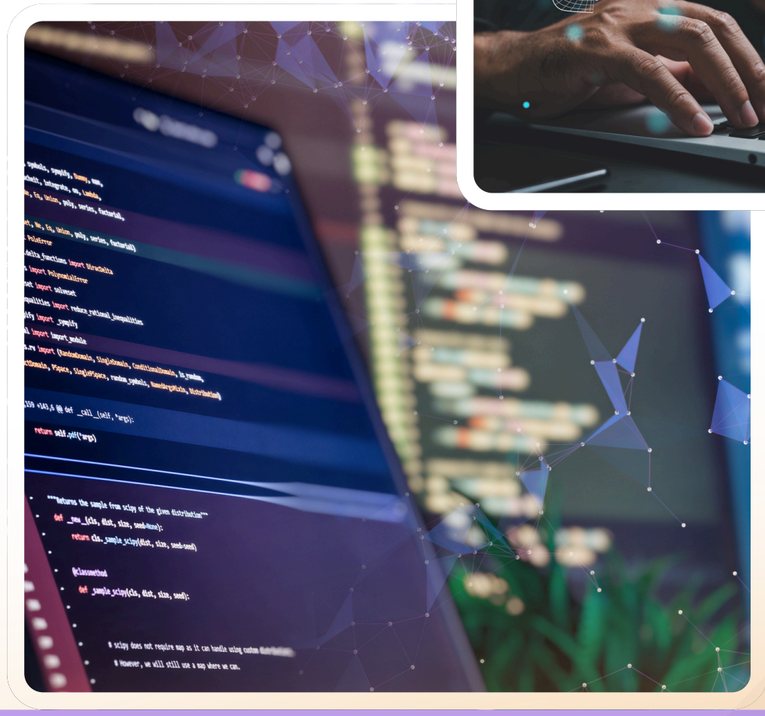
About the Course

This comprehensive 8-week online course on Python for Data Analytics and Machine Learning is designed to equip learners with in-demand skills in data-driven technologies. The program focuses on building a strong foundation in Python programming while gradually advancing toward real-world applications in data analysis and machine learning. Participants will gain hands-on experience in data preprocessing, exploratory data analysis (EDA), and data visualization using powerful Python libraries such as NumPy, Pandas, Matplotlib, and Seaborn. The course also introduces essential machine learning concepts and algorithms, including regression models, decision trees, and clustering techniques, using Scikit-learn.



Course Objectives

- To introduce participants to Python programming for data analysis and machine learning.
- To develop skills in data preprocessing, data manipulation, and exploratory data analysis.
- To train learners in using Python libraries for data visualization and statistical analysis.
- To provide hands-on experience with fundamental machine learning algorithms.
- To enable participants to work with real-world datasets and develop predictive models.
- To guide learners in completing a mini-project that demonstrates practical application of data analytics and machine learning techniques.

Course Outcomes & Benefits

- Learn Python for Data Analytics & Machine Learning
- Analyze and preprocess real-world datasets
- Perform EDA and extract insights & Create clear and effective visualizations
- Apply core Machine Learning algorithms & Build and evaluate predictive models
- Work with industry tools and libraries
- Solve practical data-driven problems
- Develop a hands-on mini project and Gain job-ready technical skills
- Enhance career opportunities in Data Science
- Improve analytical and problem-solving skills
- Experience live, interactive learning
- Earn a valuable certification

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Target Audience

- Undergraduate students (BCA, BSc, BTech)
- Postgraduate students (MCA, MSc Data Science, MSc Computer Science)
- Research scholars
- Early-career professionals
- Aspiring data analysts and data scientists
- Individuals interested in Artificial Intelligence and Machine Learning
- Beginners looking to build skills in Python programming and data analytics

Software/Tools Required

- Python
- Jupyter Notebook / Anaconda
- GoogleColab (for cloud-based coding)
- NumPy
- Pandas
- Matplotlib
- Seaborn
- Scikit-learn

Participant Benefits & Deliverables

- ISO–IAF Accredited Certificate
- Live session recordings (lifetime access) & lecture PPTs
- Software, tools & resource download links
- 100% Practical Learning Approach
- Mini Project & Final Presentation
- Suitable for NAAC / NBA / Academic Skill Development Records

Fee of the Training

- **Indian Participants: Rs 8000/**
- **Other Participants: US 200 $**

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Course Module

Week 1 – Introduction to Python Programming

- Introduction to Python and its applications in Data Analytics and AI
- Python installation and environment setup (Anaconda / Jupyter Notebook)
- Python basics: variables, data types, operators
- Control structures (if–else, loops)
- Functions and basic scripting

Week 2 – Python for Data Handling

- Introduction to NumPy
- Introduction to Pandas
- Data structures in Pandas (Series, DataFrames)
- Data loading and data manipulation
- Data cleaning and preprocessing

Week 3 – Exploratory Data Analysis

- Data summarization and descriptive statistics
- Handling missing values and outliers
- Data transformation techniques
- Introduction to exploratory data analysis

Week 4 – Data Visualization

- Visualization using Matplotlib
- Visualization using Seaborn
- Creating bar charts, histograms, scatter plots, and heatmaps
- Interpreting visual insights from datasets

Week 5 – Introduction to Machine Learning

- Overview of Machine Learning concepts
- Types of Machine Learning (Supervised and Unsupervised)
- Dataset splitting (training and testing)
- Introduction to Scikit-learn

Week 6 – Supervised Machine Learning

- Linear Regression
- Logistic Regression
- Model training and evaluation
- Performance metrics

Week 7 – Advanced Machine Learning Techniques

- Decision Trees
- Introduction to Clustering
- K-Means Clustering
- Model comparison and improvement

Week 8 – Mini Project

- Working with a real-world dataset
- Building a predictive model
- Model evaluation and visualization
- Project presentation and discussion

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