Data Science & AI Program

Develop the skills required to become a **Data Scientist and AI professional** through structured learning, real-world projects, and mentorship.

This program focuses on practical knowledge in **Python, data analysis, machine learning, and advanced analytics tools**.

Program Details

Duration: 6 Months (24 Weeks)

Class Schedule: Tuesday – Thursday – Saturday

Session Duration: 2 Hours per Session

Learning Format

- 72 Live Instructor-Led Sessions
- Practical Coding Exercises
- Real-world Projects
- Weekend Mentorship
- Personality Development Analysis (PDA)

Learning Methodology

The program follows a **hands-on and practical learning approach**.

Students will learn how to work with data, build models, and extract insights from real datasets.

Live Instructor-Led Classes

Coding exercises and practical assignments

Real Datasets for Analysis

Data science case studies with real-world data

Portfolio Projects

Mentorship and career guidance throughout the program

Students gain experience in **data analysis, statistical thinking, and machine learning applications.**

# Month 1: Python Programming for Data Science

🎯 **OBJECTIVE**

Build programming foundation.

Topics

- Introduction to Data Science
- Installation of Anaconda and Jupyter Notebook
- Python Basics
- Variables and Data Types
- Operators
- Conditional Statements
- Loops
- Functions in Python
- Lists, Tuples, Sets, Dictionaries
- File Handling
- Introduction to Python Libraries

Practical

- Python coding exercises
- Mini programs
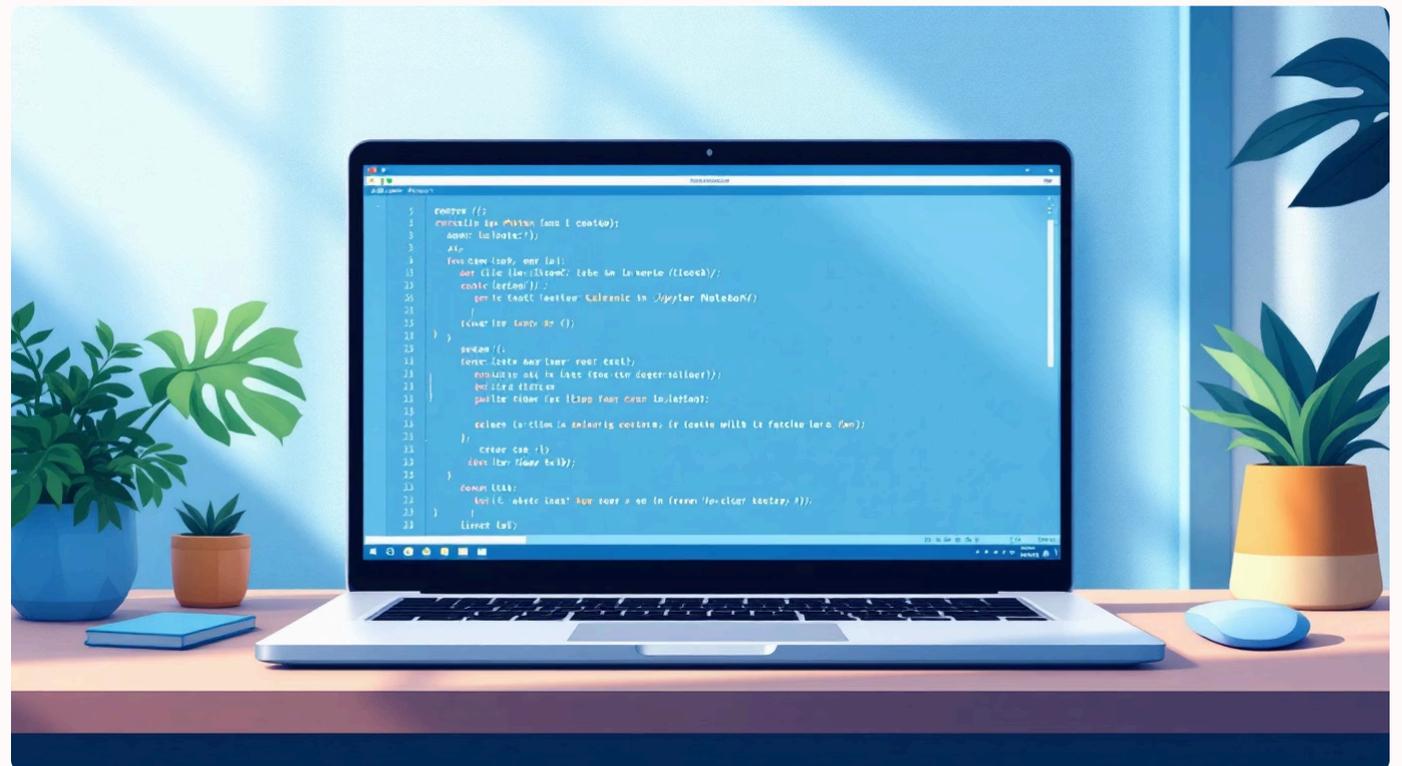
Month 2: Data Analysis using Python

OBJECTIVE

Learn data manipulation and analysis.

Libraries
Topics

- Arrays and Matrix operations
- DataFrames and Series
- Data cleaning
- Handling missing data
- Data transformation
- Filtering and grouping data
- Data import and export (CSV, Excel)

Practical

- Data cleaning project
- Data analysis on real datasets

NumPy

Pandas

Month 3: Data Visualization

🌐 OBJECTIVE

Understand data visually for insights.

Libraries

- Matplotlib
- Seaborn
- Plotly

Practical

- Create visualization reports
- Data storytelling

Topics

- Importance of data visualization
- Bar charts
- Line charts
- Histograms
- Pie charts
- Heatmaps
- Scatter plots
- Dashboard concepts

Month 4: Statistics & Mathematics for Data Science

Understand statistical concepts used in machine learning.

Descriptive Statistics

- Mean, Median, Mode
- Variance and Standard Deviation

Probability

- Probability basics
- Probability distributions
- Hypothesis Testing

Advanced Concepts

- Correlation and Covariance
- Linear Algebra basics
- Sampling techniques

🗋 **Practical:** Statistical analysis using Python

Month 5: Machine Learning

🎯 OBJECTIVE

Build predictive models.

Library

Scikit-learn

Topics

- Introduction to Machine Learning
- Types of Machine Learning
- Supervised Learning
- Unsupervised Learning
- Regression Models
- Linear Regression
- Multiple Regression
- Classification Models
- Logistic Regression
- Decision Tree
- Random Forest

Model Evaluation

Accuracy

Confusion Matrix

Cross Validation

Practical

Build ML models using datasets

Month 6: Advanced Tools & Final Project

🔲 OBJECTIVE

Develop industry-ready data science skills.

Topics

- Introduction to Deep Learning
- Introduction to Natural Language Processing
- Model deployment basics
- Data Science workflow
- Data ethics and governance
- Portfolio building

Tools

Final Project

Students complete one real-world project.

Examples:

- Sales prediction
- Customer churn prediction
- Movie recommendation system
- Sentiment analysis

Tableau	Power BI	GitHub

Mentorship & PDA Sessions

Weekly Mentorship Sessions

Students receive regular guidance from mentors.

Mentorship includes:

- Assignment feedback
- Project guidance
- Doubt clarification
- Career advice
- Industry insights

Personality Development Analysis (PDA)

Students participate in PDA sessions to build professional skills.

Focus Areas:

- Communication skills
- Analytical thinking
- Problem-solving ability
- Interview readiness
- Confidence building
- Professional presentation skills

Certifications & Interview Preparation

Students receive **a certificate of completion at the end of every module**.

Module Certifications

- Module 1: Python Programming for Data Science
- Module 2: Data Analysis using Python
- Module 3: Data Visualization
- Module 4: Statistics & Mathematics
- Module 5: Machine Learning
- Module 6: Advanced Tools & Final Project

Module-Based Interviews

After each module, students participate in **module-specific interview assessments**.

These interviews evaluate:

- Technical knowledge
- Analytical thinking
- Problem-solving ability
- Communication skills

Professional Data Science Portfolio

Multiple Module Certifications

Interview Preparation Experience

Strong Technical & Professional Skills