

TechLeap Academy



TECHLEAP ACADEMY

UNLOCK YOUR INTELLECTUAL GRACE

ADVANCED CERTIFICATION PROGRAM IN

# DATA SCIENCE & ANALYTICS

Powered by: **IBM**

# Table of content :

- About Us
- Program Overview
- Tools & skills learnt
- Job Opportunities

- Detailed Curriculum
- Recruitment Partners
- Code of Conduct
- Contact Us



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# About us:

TechLeap Academy is an EdTech Platform, offers a diverse range of programs designed to match your ambitions and career goals. Whether you're just starting your journey in technology or looking to upskill, our carefully curated courses provide the perfect blend of theory and hands-on experience.

From software development and web technologies to digital marketing, data analytics, and emerging tools, our programs are built with industry demand in mind. Each course is led by experienced mentors who guide you through real-world projects, ensuring you gain the confidence and expertise to succeed.

## Program Overview

### Phase-1 (Application & Onboarding)

1.----- Application Submission-----2.----- Application Submission

### Phase-2 (Journey Begin)

1.----- Basic Quiz-----2.-----Self Analysis Drill



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## Phase-3 (Let's start mentorship)

- 1.-----Data Science & Analytics (Basic to advance)
- 2.-----LIVE sessions + weekly challenges.
- 3.-----Guidance of Industry Mentor

## Phase-4 (Ready to join the industry)

- 1.----- Live Projects-----
- 2.-----Phase Test-----
- 3.-----Internship Opportunities-----
- 4.-----Career Assistance Session-----
- 5.-----Mock Interviews



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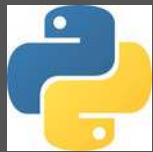
# IBM Certification

1. -----3+ Industrial Expert Guest Sessions
2. -----IBM Certification
3. -----3+ Advanced Projects

# Tools & skills learnt



Tableau & Excel



Python

Scikit-learn, Pandas, TensorFlow

Streamlit & Flask



SQL

Data Analysis & Visualization

Machine Learning & Deep Learning:  
NLP & Neural Networks

CI/CD & GitHub Actions

# Job Opportunities

Data Analyst  
(₹4-7 lakhs per annum)

Data Scientist  
(₹6-9 lakhs per annum)

Data Engineer  
(₹6-9 lakhs per annum)

Business Intelligence Analyst  
(₹5-8 lakhs per annum)

Data Visualization Analyst  
(₹5-8 lakhs per annum)

Data Architect  
(₹8-12 lakhs per annum)

Big Data Engineer  
(₹7-10 lakhs per annum)

Quantitative Analyst  
(₹8-12 lakhs per annum)

# Curriculum

**Week 1** – Introduction to Data Science - What is Data Science & Analytics?

- Data Science workflow & lifecycle - Roles: Data Scientist vs. Analyst vs. Engineer - Tools overview: Python, Jupyter, Git, SQL, Excel - Hands-on: Setup Python (Anaconda / Jupyter) & explore datasets.

**Week 2** – Python for Data Science - Python basics: variables, data types, operators - Lists, tuples, sets, dictionaries - Control structures: loops, conditionals - Functions & modules - Hands-on: Small dataset cleaning & analysis in Python.

**Week 3** – Data Handling & Numpy - NumPy arrays & operations - Indexing, slicing, reshaping - Mathematical functions & broadcasting - Hands-on: Work with numerical datasets using Numpy.

**Week 4** – Data Manipulation with Pandas - Pandas Series & DataFrames - Importing/exporting data (CSV, Excel, JSON, SQL) - Data cleaning: missing values, duplicates, data types - Filtering, grouping, aggregation - Hands-on: Analyze a sales dataset with Pandas.

**Week 5** – Data Visualization - Matplotlib basics (line, bar, scatter, histograms) - Seaborn (pair plots, heatmaps, distribution plots) - Plotly (interactive visualizations) - Choosing the right chart for insights - Hands-on: Create dashboards with real-world datasets.

**Week 6** – Statistics for Data Science (Part 1) - Descriptive statistics (mean, median, mode, variance, std deviation) - Probability basics - Probability distributions (Normal, Binomial, Poisson) - Hands-on: Analyze student performance dataset with statistics.

**Week 7** – Statistics for Data Science (Part 2) - Inferential statistics - Hypothesis testing (t-test, chi-square, ANOVA) - Correlation & covariance - Confidence intervals & p-values - Hands-on: Hypothesis testing on marketing campaign data

**Week 8** – Exploratory Data Analysis (EDA) - Understanding data distributions - Outlier detection (Z-score, IQR method) - Feature relationships (scatter plots, correlation heatmaps) - Case study: EDA on Titanic / HR analytics dataset

**Week 9** – SQL for Data Science - SQL basics: SELECT, WHERE, ORDER BY - Joins, subqueries, group by & aggregate functions - Data extraction for analysis - Hands-on: SQL queries on a sample e-commerce database

**Week 10** – Introduction to Machine Learning - Supervised vs Unsupervised learning - ML workflow: preprocessing → training → evaluation - Train-test split, cross-validation - Hands-on: Predict house prices with Linear Regression.

**Week 11** – Supervised Learning Algorithms - Regression (Linear, Multiple, Polynomial) - Classification (Logistic Regression, KNN, Decision Trees) - Model evaluation metrics (Accuracy, Precision, Recall, F1, AUC) - Hands-on: Customer churn prediction.

**Week 12** – Unsupervised Learning - Clustering (K-Means, Hierarchical, DBSCAN) - Dimensionality Reduction (PCA) - Market basket analysis (Apriori, Association rules) - Hands-on: Customer segmentation with clustering.

**Week 13** – Advanced ML & Feature Engineering - Handling missing data & outliers - Feature encoding & scaling - Regularization (Lasso, Ridge) - Model selection & hyperparameter tuning (GridSearchCV) - Hands-on: Build ML pipeline for credit scoring.

**Week 14** – Data Analytics & Business Applications - Data-driven decision making - A/B Testing - Time series forecasting (ARIMA basics) - Case study: Sales prediction & trend analysis.

**Week 15** – Capstone Project Development - Choose dataset & define problem - Perform EDA & preprocessing - Apply ML/Analytics techniques - Build dashboards / reports - Hands-on: Project implementation with weekly guidance

**Week 16** – Final Project & Career Preparation - Finalize & present Capstone Project - Resume building for Data Science roles - GitHub portfolio setup (projects, notebooks) - Interview preparation (common DS questions, case studies) - Presentation day: Showcase insights & models

Capstone Project Ideas:

1. Customer Segmentation for Marketing
2. Fraud Detection in Transactions
3. Predictive Healthcare Analytics
4. Stock Market Trend Prediction
5. Movie Recommendation System
6. Employee Attrition Prediction

# Recruitment Partners



# Code of Conduct

**Program Structure:** Skill Development Track: We will focus on enhancing skills and knowledge with LIVE sessions from industry mentors.

**Certification:** Successful completion of the program, including assessments, projects, and attendance, will lead to gaining Completion Certificate and Project Certificate. Internship Certificate will be provided by the company you'll be interning with, if any. Career Track **(Early Career Opportunities):** We will provide opportunities for early career development through internships.

**Code of Conduct Class Schedule and Attendance:** Regular Classes: Classes will be held two times a week on a consistent schedule. Evening Time Slots: Class timings will be in the evening slot between 6:30 PM - 10:00 PM, and each session will last approximately 1-1.5 hours.

**Mandatory Attendance:** A minimum of 70% attendance in live classes is required. Certification Criteria: Certifications will only be issued to students who maintain the required attendance.

## Contact Us

### **Course starts:**

Classes from first week of the month

### **Program hours:**

50+ learning hours

4+ Industrial Projects



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