



DATA SCIENCE Syllabus

Master Data Science with hands-on projects, real-world case studies, and expert mentorship. Build a strong foundation in Python, statistics, data visualization, machine learning, deep learning, and AI applications.

This course includes everything you need to become a job-ready Data Science. From mastering SQL, Python, and data modeling, to working with big data tools like Hadoop and Spark – you'll learn how to build robust data pipelines, design ETL workflows, and manage databases. You'll also gain hands-on experience with cloud platforms such as AWS and Azure, and work on real-world projects that prepare you to handle large-scale data systems used in the industry.

1. Programming & Foundations

Build a strong foundation with Python, data structures, and libraries like NumPy, Pandas, and Matplotlib for data manipulation and visualization.

2. Statistics & Mathematics

Master descriptive and inferential statistics, probability, linear algebra, and calculus — the mathematical backbone of data science.

3. Data Wrangling & Preprocessing

Handle missing data, perform feature engineering, outlier detection, and scaling using Pandas, NumPy, and SQL.

4. Machine Learning & AI

Learn supervised and unsupervised algorithms — regression, classification, clustering, PCA, SVM, and more using scikit-learn, XGBoost, and CatBoost.

5. Deep Learning & Neural Networks

Understand CNNs, RNNs, and Transformers using TensorFlow, Keras, and PyTorch to build modern AI systems.

6. Real-World Projects & Cloud Tools

Work with Git, Spark, Power BI, and MLOps tools like Docker, MLflow, and Airflow to deploy models and manage pipelines.

Phase 1: Programming & Foundations (1–1.5 months)

- Lecture 1: Introduction to Data Science & Python
- Python Basics: Variables, Loops, Functions
- Data Structures: Lists, Tuples, Dictionaries, Sets
- File Handling, Modules & Packages
- Libraries: NumPy, Pandas, Matplotlib, Seaborn

Phase 2: Statistics & Mathematics (1–1.5 months)

- Descriptive Statistics: Mean, Median, Mode, Variance
- Probability Distributions: Normal, Binomial, Poisson
- Hypothesis Testing: Z-test, T-test, Chi-Square
- Correlation & Regression Basics
- Mathematics: Linear Algebra, Calculus, Probability Theory

Phase 3: Data Handling & Preprocessing (1 month)

- Handling Missing Values & Outliers
- Encoding Categorical Data
- Feature Scaling & Normalization
- Merging, Joining & Grouping Datasets
- Tools: Pandas, NumPy, SQL, OpenPyXL

Phase 4: SQL for Data Science (1 month)

- Basic Queries: SELECT, WHERE, GROUP BY, ORDER BY
- Joins, Subqueries, and CTEs
- Window Functions & Analytical Queries

Phase 5: Exploratory Data Analysis (EDA) (1 month)

- Univariate & Bivariate Analysis
- Correlation Heatmaps & Pattern Detection
- Data Storytelling with Visuals
- Libraries: Matplotlib, Seaborn, Plotly

Phase 6: Machine Learning (2–3 months)

- Supervised Learning: Linear & Logistic Regression
- Decision Trees, Random Forest, SVM, XGBoost
- Unsupervised Learning: KMeans, DBSCAN, PCA
- Model Evaluation: Precision, Recall, F1, ROC-AUC
- Libraries: scikit-learn, xgboost, catboost

Phase 7: Deep Learning (2 months)

- Basics of Neural Networks & Gradient Descent
- Activation & Loss Functions
- CNNs for Image Data
- RNNs, LSTMs & Transformers (for NLP)
- Libraries: TensorFlow, Keras, PyTorch

Phase 8: Real-World Tools & Projects (2–3 months)

- Version Control: Git & GitHub
- Data Visualization: Power BI / Tableau
- Big Data: Spark / PySpark
- Cloud & MLOps: AWS, Docker, MLflow, Airflow
- Projects: Churn, Stock Prediction, NLP, Fraud Detection

Phase 9: Business & Communication Skills (Ongoing)

- Storytelling with Data
- Domain Understanding: Finance, Healthcare, Marketing
- Building Dashboards & Reports
- Explaining ML Models to Non-Technical Audiences

Phase 10: Portfolio & Job Readiness (Final Phase)

- Building a Strong GitHub Portfolio
- Writing Blogs on Medium/Kaggle
- LinkedIn Portfolio & Networking
- Mock Interviews & Resume Prep
- Target Roles: Data Analyst, Data Scientist, ML Engineer

DURATION OF COURSE	87.6 hours of content
FEES OF THE COURSE	₹24,999/- Only
EXERCISES	126 practice exercises

Apart from above course details, we will also deliver below: -

- *We will guide you what kind of questions can be asked in interview.*
- *We will help you in building your resume.*
- *We will take mock interview to prepare you for real time interview.*
- *Upon completion of the course, learners will be issued a formal certificate recognizing their achievement.*
- *The total duration of the course is 87.6 Hours.*
- *All sessions will be conducted through live online classes.*
- *Gain valuable insights from an industry veteran with more than ten years of hands-on experience.*

Sharing of videos to another person is strictly prohibited.

Contact us For Admission or Queries: -

