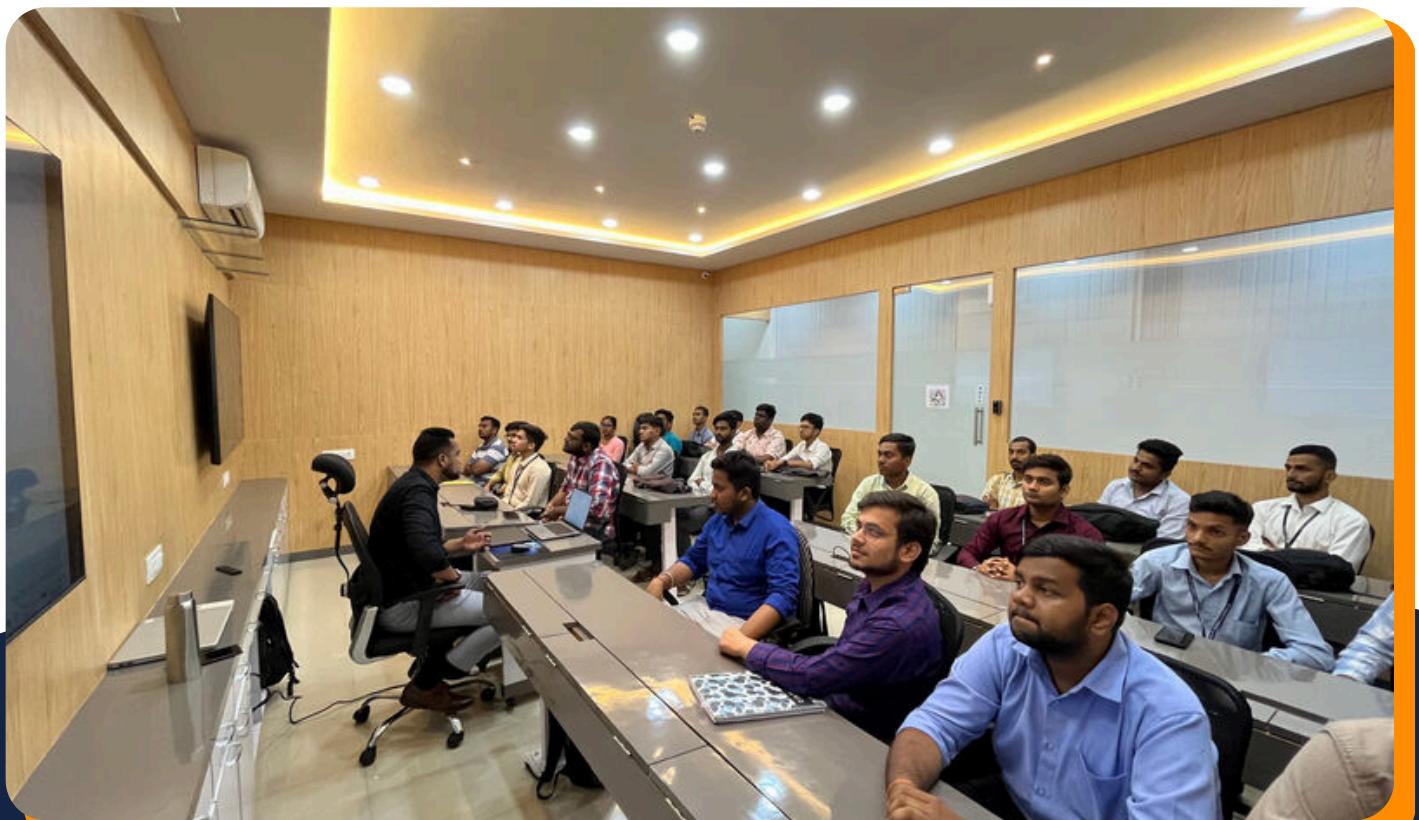




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Duration
255 Hours

MASTER PROGRAM IN **Comprehensive Data Science and AI - Master Program**



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About Us

Cinute Digital Pvt. Ltd. (CDPL) is a Premier EdTech Company, bridging the gap between academic learning and industry demands. Our hands-on training programs in Software Testing, Data Science & AI, Machine Learning, and Business Intelligence equip graduates and professionals with job-ready skills.

Our Mission

To provide experiential, high-quality IT training that empowers individuals with in-demand skills, making them employable and future-ready.



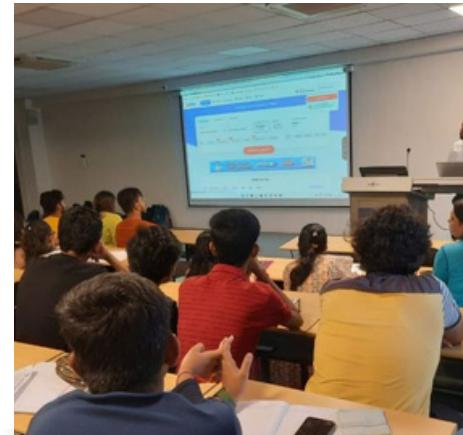
Our Vision

To be the leading IT training institute, equipping learners with cutting-edge skills for career success, and bridging the gap between academic learning and industry.





CDPL ADVANTAGES



80:20 APPROACH

80 practical and 20 Theory model
for Industry rich Experience



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At Cinute Digital, we prepare you to deliver this transformative value. Our curriculum bridges theoretical knowledge with practical expertise, ensuring you stand out as a proficient Data Science in any industry.



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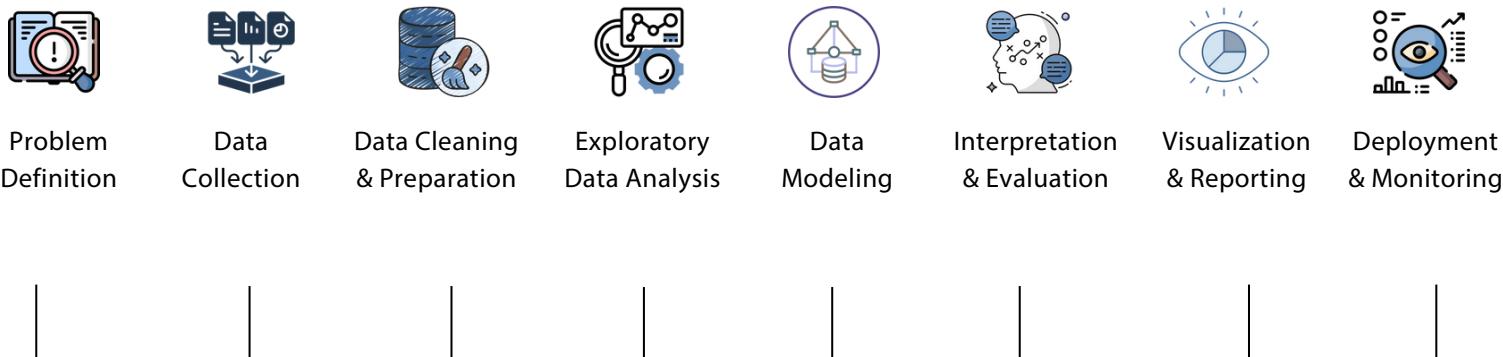


Advance Data Science : A Complete Overview

Cinute Digital's 200-Hour Advanced Data Science Certification Program is designed with industry experts to prepare freshers and professionals for high-growth careers in data science. The course covers Python, R, SQL, Statistics, and Machine Learning, with a focus on real-world applications.

Through practical Assignments, Case Studies, and Capstone Projects, you'll master core techniques in Data Science and Model Building. Discover how this program makes you job-ready and why Cinute Digital is the ideal partner for your Data Science journey.

Data Science Process Model



Data Science:

Why Data Science Powers Modern Innovation

Data science enables organizations to uncover deep insights, predict future trends, and make smarter, faster decisions. It drives innovation, efficiency, and competitive advantage across industries.

Studies reveal that:

- ▶ Companies using data science are 23x more effective at customer acquisition.
- ▶ Faster decisions—up to 70% quicker—lead to accelerated outcomes.
- ▶ Businesses report up to 1450% ROI through advanced analytics.

At Cinute Digital, we prepare you to lead this transformation. Our Advanced Data Science curriculum blends theoretical knowledge with real-world problem-solving, ensuring you emerge as a confident, industry-ready data science professional.





Why Should You Invest in the Course?

25%

Market growth
from 2020 to 2030

101,000+

Job Vacancies
in India

9 LPA

Data Scientist
freshers' average salary

75%

Job Satisfaction

32%

India's share in the
global market



Top Companies Hiring Data Scientist



J.P.Morgan



and many more....



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Learning Path





Know Your Future As Advance Data Science

Job Roles You Can Apply For

Data Scientist

Machine Learning Engineer

Data Analyst

Business Intelligence Analyst

Research Analyst

Data Engineer

AI/ML Associate

Decision Scientist

Data Engineer

Statistical Analyst

Quantitative Analyst

Quantitative Researcher





Cinute Digital Pvt. Ltd. In Action





Course Highlights



Course Duration
255+ Hours / 9 Months

Lifetime Access to
the content

6+ Skills and
15+ Tools Covered



5+ Capstone Projects
on Different Domains

80+ Assignments &
Case Studies

10 Certificates for the
price of 1

About the Program

This Advanced Data Science course includes hands-on assignments and integrated projects that reflect real-world challenges. From Day 1, you'll receive structured interview preparation to help you succeed with over 2,000 hiring partners.

The curriculum covers everything from core foundations to advanced machine learning techniques, making it ideal for both beginners and professionals looking to upgrade their skills. You'll work on capstone projects that simulate real industry problems, gaining the confidence and experience needed in today's job market.





Mode of Learning



CLASSROOM

+

ONLINE

CDPL has a Hybrid (**CLASSROOM + ONLINE**) training pattern where students have the opportunities to attend the sessions in **classroom** as well as **online**. CDPL trainers conduct the training sessions live from CDPL classrooms. All CDPL sessions are live streamed for students from that batch, also the learners are provided with the live recording sessions, thus enabling students to attend the same sessions online and interact with the trainer as well as other students.





All our certificates are validated with a unique authorization QR code.





Our Certification

Power BI



Tableau



Python Programming



DBMS using MySQL



Advance Excel



Data Visualization in Python



ML Algorithms using Python



R Programming



Prompt Engineering with Gen AI



Deep Learning, NLP,& Generative AI



AAA Certificate





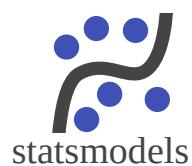
Cinute Digital Pvt. Ltd. Working With Top Global Companies

 TECHCRYPTORS	 Axiom Technologies LLP
 MediVenturz	 ARYAN TECHNOLOGIES
 LENDING TECH SOLUTIONS	 IDfy
 Tech Mahindra	 Galentic
 Interactive Brokers	 Techno Scripts <small>(An ISO 9001:2015 Certified Company)</small>
 testriq®	 VISTAAR <small>ENVISION THE POSSIBILITIES</small>
 JM FINANCIAL 50 YEARS	 marqetrix <small>web solutions</small>
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Tools & Technologies You Will Learn



Skills Covered



Database
Concepts

Data Analysis
Concepts

Functions
Charts &
Slicers

Data
Visualization





Course Curriculum

Advanced Data Science and Machine Learning

Database Management Systems with MySQL

Module 1: Introduction to DBMS & MySQL

1. Understanding DBMS

- Definition, importance & types (Relational, NoSQL, Hierarchical).
- Key concepts: Data models, schemas & data independence.

2. Introduction to MySQL

- Overview, history & features.
- Advantages and use cases in modern databases.

Module 2: Getting Started with MySQL

1. Installation and Setup

- System requirements, MySQL Server/Workbench installation.
- Basic configuration: user accounts, security settings.

2. MySQL Interfaces

- Command Line Interface (CLI) basics.
- MySQL Workbench: GUI features for design and queries.

Module 3: Database Design and Modeling

1. Database Design Concepts

- ER modeling (entities, relationships, diagrams) and relational schema conversion.
- Normalization (1NF–BCNF) and denormalization trade-offs.

2. Schema Implementation

- Table creation: data types, keys, constraints.
- Indexing basics (single/composite) for query optimization.





Course Curriculum

Module 4: SQL Basics and Essential Clauses

1. Basic SQL Queries

- SELECT, WHERE, operators (AND, OR, NOT).
- Retrieving data from single/multiple tables.

2. Essential Filtering Clauses

- IN, BETWEEN, LIKE, IS NULL.
- Sorting with ORDER BY and limiting results (LIMIT, OFFSET).

3. Data Manipulation

- INSERT, UPDATE, DELETE operations.
- Transactions (COMMIT, ROLLBACK) for data integrity

4. MySQL Operators

- Arithmetic (+, -, *, /) and concatenation.
- Logical/comparison operators for precise filtering.

Module 5: Advanced SQL

1. Joins

- Types: INNER, LEFT, SELF, CROSS; multi-table joins.
- USING clause and NATURAL JOIN simplification.

2. Subqueries

- Scalar, correlated subqueries for nested analysis.
- UNION/UNION ALL for combining results.

3. Aggregations

- GROUP BY, HAVING, aggregate functions (SUM, AVG).
- Multi-level summarization techniques.

4. Window Functions

- ROW_NUMBER, RANK, DENSE_RANK with OVER clause.
- Partitioning for running totals and moving averages.





Course Curriculum

Module 6: Database Administration

1. User Management

- Creating accounts, granting/revoking privileges.
- Security best practices for analytical databases.

2. Backup & Recovery

- Full/incremental backups with mySQLdump.
- Restoring databases from backups.

3. Query Optimization

- EXPLAIN for performance analysis; indexing strategies.
- B-tree, hash, and full-text indexes.

4. Server Configuration

- Tuning MySQL parameters for performance.
- Monitoring via slow query logs.

Module 7: SQL Advanced Features

1. DDL

- CREATE, ALTER, DROP for schema management.

2. DML

- INSERT, UPDATE, DELETE for dataset maintenance.

3. TCL

- Transaction control: COMMIT, ROLLBACK, SAVEPOINT.

4. DCL

- Access control with GRANT and REVOKE.





Course Curriculum

Module 8: SQL Objects

1. Views

- Creating virtual tables for simplified access.

2. Stored Procedures

- Writing reusable code blocks for repetitive tasks.

3. Functions & Triggers

- User-defined functions (UDFs); automating actions.

4. CTEs & Temp Tables

- Common Table Expressions; temporary table usage.

Module 9: Real-World Applications

1. Case Studies

- Sales/finance database designs; best practices.

2. Capstone Project

- Design, implement, and optimize a business-scenario database.

Module 10: Assessment and Certification

1. Final Assessment Test

- Practical and Theoretical Coverage

2. Certification





Course Curriculum

Advance Excel for Data analytics and visualization

Module 1: Introduction to Excel

1. Getting Started with Excel

- Introduction to Excel and its Interface
- Workbook, Worksheets, and Navigation

2. Basic Operations

- Exploring Excel Ribbons and Basic Short - cuts
- Creating, Saving, and Opening Excel Files

Module 2: Data Handling in Excel

1. Understanding Data Types in Excel

- Overview of Different Data Types (Text, Numbers, Dates, etc.)
- Identifying and Formatting Data Types

2. Data Entry and Modification

- Entering, Editing, and Modifying Data in Cells
- Using Autofit for Column and Row Adjustments, Deleting, and Replacing Data

3. Handling Duplicates and Null Values

- Identifying and Removing Duplicates
- Dealing with Null or Missing Values

4. Smart Data Entry Techniques

- Leveraging Excel's Predictive Entry Features
- Using Auto Fill and Flash Fill for Efficient Data Entry

5. Enhancing Data Visibility

- Freezing Panes for Easy Navigation
- Using Text-to-Columns
- Access control with GRANT and REVOKE.





Course Curriculum

Module 3: Essential Excel Functions

1. Understanding Formulas and Functions

- Difference Between Formulas and Functions
- Using Arithmetic and Logical Operators for Basic Calculations

2. Mathematical and Statistical Functions

- SUM,AVERAGE,MIN,MAX
- COUNT,COUNTA,COUNTIF,COUNTIFS

3. Logical Functions

- IF,AND,OR,NOT
- Nested IF Statements for Advanced Logic

4. Text Functions

- CONCAT,TEXTJOIN,LEFT,RIGHT,MID
- LEN,TRIM,SUBSTITUTE,FIND,SEARCH

Module 4: Data Manipulation Techniques

1. Sorting and Filtering

- Basic Sorting and Custom Sorting
- Using Filters for Data Segmentation

2. Conditional Formatting

- Highlighting Cells Based on Rules
- Creating Custom Rules

3. Data Validation

- Setting Up Input Restrictions
- Creating Drop-down Lists

4. Working with Dates and Times

- Date and Time Functions
- DATE,TODAY,NOW,DAY,MONTH,YEAR,DATEDIF





Course Curriculum

Module 5: Data Visualization in Excel

1. Creating Charts and Graphs

- Column, Bar, Line, and Pie Charts
- Scatter Plots and Bubble Charts
- Combo Charts

2. Customizing Charts

- Adding Data Labels, Legends, and Titles
- Formatting Chart Elements
- Using Sparklines for Quick Visualization

Module 6: Working with PivotTables and PivotCharts

1. Introduction to PivotTables

- Creating and Modifying PivotTables
- Using Rows, Columns, Filters, and Values
- Grouping Data in PivotTables

2. Advanced PivotTable Features

- Calculated Fields and Items
- Filtering and Slicers
- Using Timelines for Date Analysis

3. PivotCharts

- Creating and Customizing PivotCharts
- Integrating PivotTables with PivotCharts

Module 7: Data Analysis Tools in Excel

1. Descriptive Statistics

- Using Data Analysis ToolPak
- Generating Summary Statistics (Mean, Median, Mode, Standard Deviation, etc.)





Course Curriculum

2. Data Analysis and Forecasting

- Linear Regression and Trendlines in Charts
 - Creating Forecast Sheets for Predictions
-

Module 8: Advanced Formulas and Functions

1. Lookup and Reference Functions

- VLOOKUP, HLOOKUP, XLOOKUP
- NDEX and MATCH

2. Nested Functions

- Combining Multiple Functions for Advanced Calculations

3. Error Handling

- Handling Errors with IFERROR and IFNA
-

Module 9: Advanced Data Handling using Power Query

1. Power Query and Power Pivot

- Introduction to Power Query
 - Importing, Transforming, and Cleaning Data
-

Module 10: Dashboarding and Reporting

1. Creating Interactive Dashboards

- Adding Data Labels, Legends, and Titles
- Formatting Chart Elements
- Using Sparklines for Quick Visualization

2. Data Storytelling

- Designing Dashboards for Effective Communication
 - Using Data to Tell a Compelling Story and Drive Insights
-





Course Curriculum

Module 11: Real-World Applications and Projects

1. End-to-End Excel Project

- Data Cleaning and Transformation
- Using Functions and Visualizations
- Creating Dashboards and Reports

2. Domain-Specific Applications

- Financial Budgeting and Forecasting
- Sales and Marketing Analytics
- Inventory and Operations Management

Module 12: Excel Tips, Tricks, and Best Practices

1. Productivity Tips

- Advance Keyboard Shortcuts
- Customizing the Quick Access Toolbar

2. Best Practices

- Organizing Workbooks for Readability
- Avoiding Common Excel Errors

Module 13: Hands-On Projects

1. Project

- Sales Performance Analysis
- Financial Data Visualization
- Customer Insights Dashboard





Course Curriculum

Data Analytics & Visualization with Power BI

Module 1: Introduction to BI Concepts and Power BI

1. Understanding Business Intelligence

- Introduction to Business Intelligence
- Overview of BI Tools
- The BI Lifecycle
- BI Concepts in Decision Making

2. Introduction to Power BI

- What is Power BI?
- Why Power BI?
- Power BI Desktop vs Power BI Service vs Power BI Mobile
- Benefits and Applications

Module 2: Setting Up Power BI

1. Installation and Configuration

- System Requirements
- Installing and setting up Power BI Desktop

2. Getting Started with Power BI

- Power BI Interface Overview
- Saving and Exporting Workbooks

3. Connecting to Different Data Sources

- Connecting to a CSV file
- Connecting to an Excel file
- Getting Data from all files in a Folder
- Getting Data from other sources such as XML file and Database
- Difference between Loading Data and Transforming Data





Course Curriculum

Module 3: Data Transformation using Power Query Editor

1. Introduction to Power Query Editor

- Exploring Ribbons in Power Query Editor
- Transform Column Vs. Add Column

2. Cleaning and Shaping Data

- Handling Missing and Duplicate Data
- Split and Merge Column Tools
- Extract and Replace Values Tools
- Pivoting and Unpivoting in Power Query

3. Merging and Appending Queries

- Appending Queries in Power Query
- Merging Queries in Power Query

4. Transformation Techniques

- Text Transformation Tools
- Number Transformation Tools
- Date and Time Transformation tools
- Conditional Columns

Module 4: Data Modeling in Power BI

1. Building Data Models

- Understanding Tables and Model Relationships
- Facts and Dimension Tables
- Star Schema Vs. Snowflake Schema
- Cardinality and Cross-Filter Directions





Course Curriculum

Module 5: Data Visualization Basics

1. Creating Basic Visualizations

- Bar Charts, Line Charts, and Pie Charts
- Tables, Matrix, and Cards
- Slicers and Filters
- Map Visualizations (Basic and Filled Maps)

2. Customization

- Formatting Visuals
- Conditional Formatting
- Sorting and Filtering Data in Visuals

Module 6: DAX (Data Analysis Expressions)

1. Basic DAX

- Introduction to Dax and Syntax
- Types of Operators and Functions
- Creating New Columns and New Measures
- Using Explicit Measures to Create New Measures

Module 7: Advanced Visualization Techniques

1. Advanced Visuals

- Tree Maps, Waterfall Charts, and Funnel Charts
- Gauge Charts and KPI Indicators
- Ribbon Charts and Scatter Plots
- Forecasting and Advance analytics

2. Advanced Interactivity

- Drill-Down and Drill-Through Features
- Using Tooltips for Additional Insights
- Using of Filters and Slicers





Course Curriculum

Module 8: Dashboards and Reports

1. Creating Dashboards

- Designing Interactive Dashboards
- Best Practices for Dashboard Layout and Design
- Using Visual Interactivity to Enhance Storytelling
- Adding Page Navigator and Bookmarks

2. Publishing and Sharing

- Publishing Reports to Power BI Service
- Sharing Dashboards with Teams and Organizations

Module 9: Case Studies and Real-World Applications

1. End-to-End Project

- Data Extraction, Transformation, and Modeling
- Visualization and Dashboard Creation
- Publishing and Sharing Insights

Module 10: Hands-On Projects

1. Project

- Sales Performance Analysis

2. Project

- Financial Data Visualization

3. Project

- Customer Insights Dashboard





Course Curriculum

Data Visualization in Python

Module 1: Python Fundamentals

1. Introduction to Python Programming

- Overview of Python
- Basic Syntax, Variables, Data Types

2. Core Python Concepts

- Conditionals and Loops
- Functions, Modules, Script Execution

Module 2: Python for Visualization & Environment Setup

1. Python for Visualization

- Visualization Overview
- Key Libraries (matplotlib, seaborn, pandas)

2. Environment Setup

- Python Installation & Jupyter Notebook Setup
- Setting Up on Windows, macOS, Linux

Module 3: Data Analysis with pandas

1. Introduction to pandas

- Overview, Key Features
- Understanding DataFrames & Series

2. Working with Data Sources

- Importing/Exporting Data (CSV, Excel, JSON)
- Saving Cleaned Data





Course Curriculum

3. Data Exploration & Cleaning

- Loading & Summarizing Data
- Handling Missing & Duplicate Data

4. Data Manipulation

- Filtering, Renaming, Type Conversion
- Sorting, Pivot Tables

5. Advanced Manipulation

- Merging, Joining, Concatenating
- Grouping, Aggregating, Multi-Indexing

6. Exploratory Data Analysis (EDA)

- Descriptive Statistics, Correlation, Covariance

7. Case Study: Cancer Data Analysis

- End-to-End Case Study: From Cleaning to Visualization

Module 4: Data Visualization with Matplotlib

1. Introduction to Matplotlib

- Overview, Installation, and Setup
- Basic Plotting

2. Customizing Plots

- Titles, Axis Labels, Legends, Annotations
- Colors, Markers, Line Styles
- Axis Limits & Date/Time Formatting

3. Figures, Axes, and Advanced Plots

- Managing Multiple Plots and Subplots
- Advanced Visuals (Histograms, Box Plots, Heatmaps)
- 3D Plotting (Scatter Plot, Surface Plot)

4. Annotations & DataFrames

- Text Annotation Techniques
- DataFrames Visualization (Line, Bar, Pie Charts)
- Integrated Storytelling





Course Curriculum

5. Interactivity & Animation

- Animations & Interactive Widgets (Sliders, Buttons)
- Creating Simple Animations

6. Best Practices

- Choosing the Right Plot & Simplifying Visuals
- Effective Color Schemes, Accessibility
- Clear Labels and Legends

7. Case Studies & Applications

- End-to-End Visualization Projects
- Domain-Specific Applications

8. Hands-On Projects

1. Project

- Data Trends Visualization

2. Project

- HR Data Plotting

3. Project

- Real-Time Data Monitoring with Animations

Module 5: Advanced Visualization with Seaborn

1. Introduction to Seaborn

- Overview, Built-in Themes, Color Palettes
- Statistical Visuals Support

2. Basic Plotting

- Line, Bar, Histogram, Scatter
- Data Exploration & Trend Analysis

3. Statistical Visualization

- Distribution Visuals (Hist, KDE, Rug)
- Variable Relationships (Pair & Joint Plots)
- Statistical Insights





Course Curriculum

4. Categorical Visualization

- Strip, Box, Violin Plots
- Swarm Plots & Categorical Summary

5. Advanced Visualization

- Heatmaps, Cluster Maps, Hierarchical Clustering
- Multi-Plot Grids (Pair, Facet)

6. Customization & Aesthetics

- Themes & Plot Styles (darkgrid, whitegrid)
- Titles, Axis Labels, Legends
- Figure Size & Aesthetic Adjustments

7. Integration with pandas

- DataFrames Visualization
- Data Aggregation, EDA

8. Hands-On Projects

1. Project

- Titanic Survival Analysis

2. Project

- Iris Data Visualization

3. Project

- Financial Dataset Heatmap





Course Curriculum

Module 6: Scientific Computing with NumPy

1. Introduction to NumPy

- Overview, Key Features
- Installation and Setup

2. NumPy Basics & Arrays

- Arrays vs Python Lists
- Creating 1D/2D/Multi-Dimensional Arrays
- Arithmetic Operations (sum, mean, etc.)
- Indexing, Slicing, Subarrays

3. Data Preparation

- Random Data Generation (np.random)
- Reshaping, Resizing, Broadcasting

4. Mathematical Functions

- Element-wise operations
- Functions, exponents, logarithms
- Linear algebra (dot product, matrix multiplication)

5. Advanced Indexing

- Boolean indexing
- Fancy indexing
- Conditional selection (using np.where)





Course Curriculum

Data Analytics & Visualization with Tableau

Module 1: Introduction to BI Concepts and Tableau

1. Understanding Business Intelligence

- Introduction to BI
- Overview of BI Tools
- Role of BI in Decision Making
- Understanding The Analytical Workflow in Every Business

2. Introduction to Tableau

- What is Tableau?
- Why Tableau?
- Tableau Product Suite Overview
- Benefits and Applications

Module 2: Setting Up Tableau

1. Installation and Configuration

- System Requirements
- Installing Tableau Desktop/Public

2. Getting Started with Tableau

- Tableau Interface Overview
- Connecting to Different Data Sources
- Saving and Exporting Workbooks

Module 3: Data Integration Techniques

1. Combining Data

- Relationships in Tableau
- Joins: Types and Use Cases
- Unions for Merging Data





Course Curriculum

2. Understanding Logical and Physical Layers

- Key Differences
 - Use Cases for Each
-

Module 4: Data Categorization and Management

1. Data Types and Formats

- String, Numeric, Date, and Boolean
- Changing Data Types

2. Dimensions and Measures

- Discrete vs Continuous Fields
 - Configuring Data Pane
-

Module 5: Creating Fundamental Charts

1. Basic Visualization Techniques

- Bar Charts
 - Line Charts
 - Scatter Plots
-

Module 6: Enhancing Visualizations

1. Customization with Marks Card

- Colors, Shapes, and Sizes
 - Adding Labels and Tooltips
 - Interactive Highlighting
-





Course Curriculum

Module 7: Advanced Visualization Techniques

1. Specialized Charts

- Treemaps and Heatmaps
- Gantt and Bullet Charts

2. Geospatial Visualizations

- Geographic Maps and Custom Geocoding
- Heat Maps and Density Maps

3. Advanced Multi-Axis Charts

- Dual-Axis and Combined Visualizations

Module 8: Organizing and Filtering Data

1. Grouping and Sorting

- Creating Groups
- Manual and Field-Based Sorting

2. Data Filtering Techniques

- Applying Filters to Visualizations
- Context and Dimension Filters

Module 9: Advanced Data Analysis

1. Calculated Fields and Functions

- Creating Custom Calculations
- Using Logical, String, and Date Functions

2. Table Calculations

- Quick Calculations (Running Totals, Percentages)
- Customizing Table Calculations

3. Analytics Tools

- Reference Lines and Forecasting
- Clustering and Trend Analysis





Course Curriculum

4. Dynamic Analysis

- Working with Sets
- Creating Custom Parameters

Module 10: Building Dashboards and Stories

1. Dashboard Design Fundamentals

- Best Practices for Layouts
- Using Filters and Actions for Interactivity

2. Storytelling with Tableau

- Combining Dashboards into Stories
- Adding Captions and Narrative Elements

Module 11: Hands-On Projects

1. Project

- Sales Performance Analysis

2. Project

- Financial Data Visualization

3. Project

- Customer Insights Dashboard

Module 12: Assessment and Certification

1. Final Assessment Test

- Practical and Theoretical Coverage

2. Certification





Course Curriculum

Python Programming

Module 1: Introduction To Python

1. Python History

- What is Python?
- History of Python
- Why use Python?
- Installing Jupyter notebooks
- Running Python code in Jupyter notebooks
- Basic commands in Jupyter

Module 2: Basics of Python

1. Python Basics

- Variables in Python
- Variables Naming Rules
- Data types
- Converting data types
- Operators in Python
- Input and Print Functions
- Basic String Manipulation

Module 3: Conditional Statements

1. Conditional Statements

- If statement
- Else and Elif clauses
- Nested conditionals
- Using logical operators in conditions
- Examples of real-world scenarios using conditionals





Course Curriculum

Module 4: Lists

1. Lists in Python

- What are lists?
 - Creating lists
 - Accessing elements (indexing, slicing)
 - Modifying lists (append, extend, insert, remove, pop, del)
 - List methods (sort, reverse, count, index)
 - Examples of using Lists
-

Module 5: Tuples

1. Tuples in Python

- What are tuples?
 - Creating tuples
 - Accessing elements (indexing, slicing)
 - Tuple properties (immutability)
 - Unpacking tuples
 - Examples of using Tuples
-

Module 6: Sets

1. Sets in Python

- What are sets?
 - Creating sets
 - Set operations (union, intersection, difference, symmetric difference)
 - Adding and removing elements
 - Checking membership
 - Examples of using Sets
-





Course Curriculum

Module 7: Dictionaries

1. dictionaries in Python

- What are dictionaries?
 - Creating dictionaries
 - Accessing values (using keys, get() method)
 - Modifying dictionaries (adding, updating, removing key-value pairs)
 - Dictionary methods (keys(), values(), items(), etc.)
 - Examples of using Dictionaries
-

Module 8: Loops

1. Loops

- For loops
 - While loops
 - Break, continue, and pass statements
 - Using loops with conditionals
 - Examples of loop usage
-

Module 9: Functions and Recursions

1. Functions in Python

- Defining functions In Python
 - Syntax (def keyword, parameters, return statement)
 - Function calls and arguments (positional, keyword, default)
 - Scope of variables (local, global)
 - Recursive functions in Python
 - Base case and recursive case
 - Exception handling (Built-in, Custom)
-





Course Curriculum

Module 10: File I/O

1. Files I/O

- Opening and closing files
- Reading from files
- Writing to files
- Handling file-related exceptions
- Working with file paths
- Examples of file operations

Module 11: Object-Oriented Programming (OOPs)

1. OOPs Concepts in Python

- Classes and objects in Python
- Defining classes and Creating objects
- Attributes and methods
- Instance variables and methods
- Class variables and methods
- Inheritance (Single and Multiple)
- Polymorphism
- Method overriding
- Encapsulation
- Private and protected members
- Property decorators
- Examples of OOP concepts

Module 12: Libraries

- Introduction to standard library modules
- Importing modules
- Creating custom modules
- Packages in Python
- Examples of using standard and custom modules





Course Curriculum

Statistics & Probability

Module 1: Introduction to Statistics

1. Getting Started with Statistics

- What is Statistics? Types: Descriptive vs Inferential
- Population vs Sample
- Data Types: Quantitative vs Qualitative
- Scales of Measurement: Nominal, Ordinal, Interval, Ratio
- Importance of Statistics in Data Science

Module 2: Descriptive Statistics

1. Understanding Descriptive Statistics

- Measures of Central Tendency: Mean, Median, Mode
- Measures of Dispersion: Range, Variance, Standard Deviation, IQR
- Skewness and Kurtosis (with interpretation)
- Five-Number Summary & Boxplots
- Data Visualization: Histograms, Pie Charts, Bar Charts

Module 3: Probability Basics

1. Understanding Probability Basics

- What is Probability? Basic Terminologies
- Types of Probability: Classical, Empirical, Subjective
- Rules of Probability: Addition, Multiplication
- Conditional Probability & Bayes' Theorem
- Independence vs Dependence of Events





Course Curriculum

Module 4: Probability Distributions

1. Understanding Probability Distributions

- Discrete Distributions:
- Bernoulli Distribution
- Binomial Distribution
- Poisson Distribution
- Continuous Distributions:
- Normal Distribution
- Standard Normal Distribution (Z-Score)
- Uniform Distribution
- Exponential Distribution

Module 5: Sampling and Sampling Distributions

1. Learning Sampling and Techniques

- What is Sampling? Importance in DS
- Types of Sampling Techniques
- Random, Stratified, Systematic, Cluster
- Central Limit Theorem (CLT)
- Standard Error
- Confidence Intervals (basic interpretation)

Module 6: Hypothesis Testing

1. Getting started with Hypothesis Testing

- Null and Alternative Hypothesis
- Type I and Type II Errors
- P-value Concept
- Z-test, T-test (One Sample & Two Sample)
- ANOVA (Basic understanding)
- Chi-square Test (for Categorical Data)





Course Curriculum

Module 7: Correlation and Regression

1. Understanding Correlation and Regression

- Covariance vs Correlation
- Pearson and Spearman Correlation
- Simple Linear Regression
- Assumptions of Linear Regression
- R-squared and Adjusted R-squared
- Residual Analysis (basic)

Module 8: Statistics in Machine Learning

1. Understanding Statistics in Machine Learning

- Bias-Variance Tradeoff
- Overfitting vs Underfitting (Statistical intuition)
- Importance of statistical assumptions in ML models
- Feature Selection (P-values, ANOVA)
- Metrics for Evaluation (Accuracy, Precision, Recall, F1 Score – statistical interpretation)





Course Curriculum

Machine Learning Algorithms with Python

Module 1: Introduction To Python

1. Getting Started with Excel

- What is Machine Learning.
- Applications of Machine Learning.
- Supervised vs Unsupervised Learning.
- Python libraries suitable for Machine Learning.
- ML Workflow.

Module 2: Data Preprocessing

1. Understanding Data Types in Excel

- Handling missing data: imputation, deletion strategies.
- Normalization and scaling: min-max scaling, standardization.
- Encoding categorical data: one-hot encoding, label encoding.
- Data splitting: training, validation, and test sets.

Module 3: Supervised Learning - Regression

1. Understanding Data Types in Excel

- Linear Regression: Assumptions, least squares method.
- Polynomial Regression: Extending linear models.
- Regularization: Ridge and Lasso techniques.

Module 4: Supervised Learning - Classification

1. Understanding Formulas and Functions

- Logistic Regression: Binary and multiclass classification.
- K-Nearest Neighbors (KNN): Distance-based classification.
- Decision Trees: Structure and interpretation.
- Random Forests: Ensemble learning basics.
- Support Vector Machines (SVM): Margins and kernels.





Course Curriculum

Module 5: Model Evaluation and Validation

1. Sorting and Filtering

- Regression Metrics: Mean Squared Error (MSE), R^2 .
- Classification Metrics: Accuracy, precision, recall, F1 score, ROC-AUC.
- Overfitting and Underfitting: Causes and solutions.
- Cross-Validation: K-fold and stratified methods.
- Hyperparameter Tuning: Grid search and random search.

Module 6: Unsupervised Learning

1. Sorting and Filtering

- K-Means Clustering: Algorithm and use cases.
- Hierarchical Clustering: Dendrograms and linkage methods.
- Principal Component Analysis (PCA): Reducing dimensionality.
- Density-Based Clustering

Module 7: Capstone Project and Real-World Applications

1. Sorting and Filtering

- Project: Design and implement an end-to-end ML solution
- Real world Case Studies.





Course Curriculum

Machine Learning and Data Visualization with R Programming

Introduction to R

1. Understanding DBMS

- Introduction to Rstudios,
- R objects - vectors, list, factors, matrix, arrays and data frames

2. Data visualization

- Without using library
- Using GGplot2 library

3. Statistics in R

- Mean/Median/Mode
- 1 2 3 Quartile
- Reading csv and excel file

4. MySQL Interfaces

- Command Line Interface (CLI) basics.
- MySQL Workbench: GUI features for design and queries.

5. Implementing ML in R

- R project 1 using lm() (linear regression)
- R project 2 using glm() (logistic regression)





Course Curriculum

Deep Learning, NLP & Generative AI

Deep Learning

1. Deep Learning introduction

2. Deep Learning concepts

- Convolutional Neural Network (CNN)
- Artificial Neural Network (ANN)

3. Deep Learning concepts for generative AI

- Recurrent Neural Network(RNN)
- Long Short Term Memory(LSTM)
- Auto encoders

GenerativeAI

1. Generative Learning

- Generative Learning foundation models
- fine tuning (transfer Learning)

2. Generative Learning Technical concepts

- Generative Adversarial Networks (GAN's)
- Variational Auto-encoders(VAE)
- Transformer

3. Prompt Engineering

- ICOC
- ZERO shot, ONE shot and Few Shot prompting PlayHT

4. Large Image Model (LIM)

- Stable diffusion
- Leonardo.ai
- Adobe firefly

5. Video and speech tools

- veed.io
- PlayHT

6. Large Language Models(LLM)

- Bing
- Bard
- ChatGPT





Course Curriculum

NLP

1. NLP fundamentals

- Introduction to Natural Language Processing
- Scope and real-word applications of NLP

2. Basic Text Processing with NLTK

- Tokenization
- Stop word removal
- Stemming and Lemmatization
- NLTK's POS tagging capabilities

3. SpaCy Overview

- SpaCy's NER capabilities
- Understanding syntactic relationships
- Analyzing sentence structure with spaCy

4. Tensor Flow

- Tensors
- NLP with TensorFlow Project

Image Processing

1. Fundamentals of Image Processing

- Image Processing Basics

2. Object character detection

- What is OCR

3. Libraries used for OCR





Course Curriculum

Prompt Engineering with Gen AI

Module 1: Introduction to AI

- What is AI? Understanding its evolution & importance
- Real-world applications of AI
- AI vs. Machine Learning vs. Deep Learning
- Limitations & Ethical Considerations in AI

Module 2: AI Ecosystem & Machine Learning Foundations

- Subfields of AI (NLP, Computer Vision, Robotics, ML)
- Introduction to Machine Learning
- Machine Learning Types: Supervised, Unsupervised
- Basics of Neural Networks
- AI-Powered Technologies in Everyday Life

Module 3: Introduction to Generative AI

- What is Generative AI? (How AI creates new content)
- How Gen AI differs from Traditional AI
- Impact of Generative AI on different Industries
(Marketing, Healthcare, Finance, Gaming, etc.)

Module 4: Generative Learning & Technical Concepts

- Foundational Models (LLMs, LIMs, LAMs)
- Fine-tuning & Transfer Learning
- Transformer Architecture

Module 5: The Evolution & Power of Large Language Models

- Basics of NLP (Tokenization, Lemmatization, POS tagging)
- Understanding ChatGPT, GPT-4, Bard, and Bing AI
- Ethical Considerations & Bias in LLMs
- Real-World Use Cases: Chatbots and Voice Assistants





Course Curriculum

Module 6: Computer Vision & LIMs – Teaching AI to See

- Introduction to Computer Vision
- Image Processing & Feature Extraction
- Learning Large Image Models (Stable Diffusion, Leonardo.ai, DALL-E)
- Applications of LIM

Module 7: Video, Speech & Generative AI Tools

- Video and Speech AI tools (Veed.io, PlayHT, Suno.ai)
- Text-to-Speech & Speech-to-Text AI applications and Tools
- AI-powered Video & Audio generation

Module 8: Prompt Engineering & Practical Applications

- Introduction to Prompt Engineering
- Techniques: Zero-shot, One-shot, and Few-shot prompting
- Case Study: Coca-Cola Real Magic
- Hands-on Workshop: Designing prompts for different AI models

Module 9: Responsible AI & Governance

- AI Ethics & Bias in AI Models
- Governance & Responsible AI Deployment
- Future of AI & Human-AI Collaboration

Module 10: Capstone Project & Certification

- Real-world AI Implementation Project
- Assessment & Certification





Real-Time Projects

DOMAIN KNOWLEDGE



1

Domain:BFSI



Credit Risk Modeling for Loan Approval

This project involves analyzing customer transaction and engagement data to predict the likelihood of customer churn in a retail banking setting. The goal is to identify key behavioral patterns and risk factors contributing to customer attrition, enabling the bank to proactively implement retention strategies.

Python, Scikit-learn, Feature Engineering, Logistic Regression

2

Domain: E-commerce & Retail

Customer Segmentation for an E-commerce Platform

Using unsupervised learning techniques, this project aims to segment customers based on their purchase behavior, frequency, and basket size. This helps in targeting personalized marketing campaigns.

Clustering, Python, Seaborn, Data Preprocessing





Real- Time Projects

3

Domain: Retail



Sales Forecasting for a Multinational Retail Chain

This project focuses on building a predictive model to forecast product sales using historical data across multiple regions and stores. The objective is to help the business optimize inventory, reduce overstocking, and improve supply chain planning.

Python, Time Series Analysis, Forecasting Models, Data Visualization

4

Domain: Healthcare



Hospital Resource Utilization Forecasting

Build models to predict patient admissions, bed occupancy, or equipment demand to improve hospital planning and reduce operational bottlenecks.

Python, Time Series Forecasting, EDA, Visualization

5

Domain: FinTech



Fraud Detection in Financial Transactions

Develop a model to identify suspicious transactions. Use box plots, anomaly heatmaps, and time-based graphs to visualize behavior patterns.

Python, Machine Learning, Matplotlib, Seaborn

6

Domain: HR & Talent Analytics



HR Analytics: Predicting Employee Attrition

Create dashboards to visualize attrition trends by department, tenure, performance, etc., alongside a predictive model to flag at-risk employees.

Power BI, Python, Decision Trees, SQL





Cinute Digital Pvt. Ltd. Our Trainers



SHOEB SHAIKH

HEAD - LEARNING & DEVELOPMENT
SR. TEST AUTOMATION ENGINEER

Shoeb Shaikh is a seasoned Software Testing and Data Science expert and a mentor with over 13 years of experience in the field.



VAIBHAV KAKADE

QUALITY ANALYSIS ENGINEER

Experienced Software Test Engineer with proficient knowledge in Manual Testing, Defect Tracking/Reporting, DBMS and API Testing.



REHMAT SHAIKH

DATA SCIENCE TRAINER

Rehmat Shaikh is a skilled Data Science Trainer with 3+ years of experience, mentoring learners in Python, Machine Learning, and tools like Power BI, Tableau, SQL, and Pandas.



Cezzane Khan

AI & DATA SCIENCE ENGINEER

Cezzane is an experienced Data Science Trainer with over three years of expertise, guiding students in AI, Machine Learning, DL and utilizing tools such as Power BI, SQL and Libraries.





Cinute Digital Pvt. Ltd. Student Testimonial

Arun Venu Panickar



It is a great institute to learn software testing. and our mentor Shoeb Sir is a great person, he helps you to understand concepts in a simple manner. Thank you.



Faiz Khan



Everything about this course is great! From the comprehensive content to the engaging delivery, it's been an enlightening journey.



Kishore Jha



This course is designed in an efficient and effective manner. The instructor is excellent and under his guidance I was able to learn a lot of new things.



Krutika Penkar



I completed manual testing certification course from Cinute Digital. The course is well organized. Thank you Cinute.



Ragini Kumari



Best training institute for learning. It has the best skilled faculty in my experience and they have placed me in a good company.



Dakshali Merya



The instructor is highly skilled and the concepts are well comprehended.



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4.8 ★★★★★

Sulekha

5.0 ★★★★★

Google

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About the Placement Team

At Cinute Digital Pvt. Ltd., our Placement Team transforms your skills into career success. Comprised of industry experts and career coaches, we craft personalized strategies to build standout portfolios, optimize resumes and profiles, and connect you with top employers, including Test Leads and Test Managers. Our tailored interview prep and industry insights ensure you secure your dream role. Trust us to guide your journey to professional success.

About the Placement-Head



At **Cinute Digital Pvt. Ltd.**, we have "**Ashish Shetty**" as our Placement Head, a dynamic leader transforming dreams into thriving careers. With unparalleled expertise and an unwavering commitment to placement excellence, He is the cornerstone of our mission to shape your professional future and propel you into the heart of the competitive tech industry.

He drives our placement strategy by crafting standout portfolios, optimizing resumes and profiles on platforms like Naukri, Indeed, Foundit, and LinkedIn, and building a robust professional network. By connecting you with working professionals, Test Leads, and Test Managers, he opens doors to mentorship and insider opportunities. His expert interview preparation equips you to crack the toughest interviews and secure your dream job. Under Ashish Shetty's visionary leadership at Cinute Digital Pvt. Ltd., you're not just prepared—you're unstoppable.





Cinute Digital Pvt. Ltd. Placement Program



Craft a Winning Portfolio:

Build a standout portfolio and network to showcase your skills and projects.



Polish Your Resume:

Our experts will update your resume with the latest skills and projects.



LinkedIn Profile Optimization

Boost your professional LinkedIn profile by adding your certifications on LinkedIn.



Expand Your Reach:

Update your profiles on job portals like Naukri, Indeed, and Foundit.



Interview Preparatory Sessions From Day 1

We provide intensive interview preparation right from Day 1 to prepare candidates for interviews.



Ace Your Interviews:

Industry experts will conduct a SWOT analysis and give feedback on your interview performance, focusing on areas for improvement.



Launch Your Career Journey:

Get our support to secure your ideal role and kickstart your professional path.





Placement Drives at Cinute Digital Pvt. Campus





Our Students Who Have Cracked Their Dream Career In

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Dakshali Merya

accenture
Sheetal Singh

eClerx
Shrikanth Suri

JM FINANCIAL
Kartik Bomble

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Bhagyesh Mahadik

testriq
Latesh Kamble

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Tejal More

i-XL Technologies
Rajvardhan Desai

ALIF MANAGEMENT SERVICES PVT LTD
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