GENESIS
YOUR POTENTIAL. OUR PASSION



BUSINESS ANALYTICS

Course Curriculum

Duration: 3 Months

Course Overview :

The **Business Analytics Course** is designed to take learners from beginner-level concepts to advanced data analytics and business intelligence skills.
The course focuses on practical, industry-oriented learning using **Excel, SQL, Power BI, Python, Statistics, Machine Learning, and Generative AI**.

Students will learn how to collect, clean, analyze, visualize, and interpret data to support real-world business decisions.

INTRODUCTION TO BUSINESS ANALYTICS

- What is Business Analytics?
- Importance of Business Analytics
- Types of Analytics
  - Descriptive Analytics
  - Diagnostic Analytics
  - Predictive Analytics
  - Prescriptive Analytics
- Business Analytics vs Data Analytics
- Role and Responsibilities of a Business Analyst
- Analytics Lifecycle
- Business Problems and Data-Driven Decision Making
- Applications of Business Analytics
- Industry Use Cases

EXCEL FUNDAMENTALS

- Introduction to Microsoft Excel
- Excel Interface and Workbook Management
- Rows, Columns, Cells and Worksheets
- Data Entry and Formatting
- Sorting and Filtering
- Excel Tables
- Basic Formulas and Functions
- Relative and Absolute Cell References
- Mathematical and Statistical Functions
- Text Functions
- Date and Time Functions
- Logical Functions
- Error Handling



ADVANCED EXCEL FOR BUSINESS ANALYTICS

- IF, IFS and Nested IF
- SUMIF, SUMIFS
- COUNTIF, COUNTIFS
- AVERAGEIF, AVERAGEIFS
- XLOOKUP
- VLOOKUP and HLOOKUP
- INDEX and MATCH
- Advanced Text Functions
- Advanced Date Functions
- Conditional Formatting
- Data Validation
- Pivot Tables
- Pivot Charts
- Slicers and Timelines
- Excel Dashboard Development
- Business Reporting using Excel



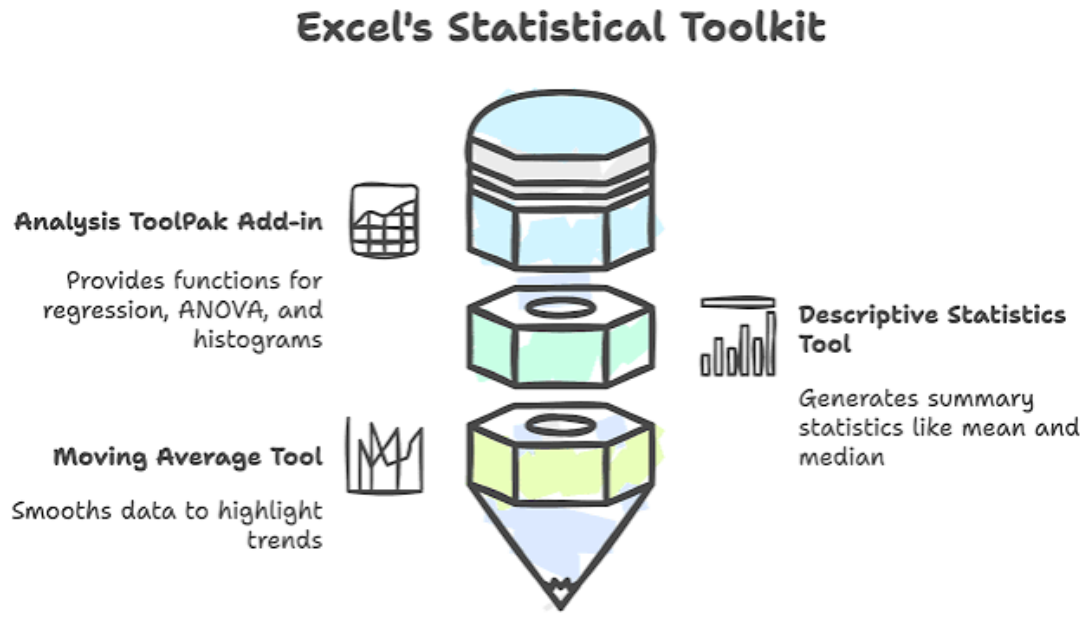
DATA CLEANING AND DATA PREPARATION

- Understanding Raw Data
- Data Quality Concepts
- Identifying Missing Values
- Removing Duplicates

- Handling Incorrect Data
- Data Formatting
- Text Cleaning
- Date Standardization
- Data Validation
- Handling Errors
- Data Transformation
- Preparing Data for Analysis

STATISTICS FOR BUSINESS ANALYTICS

- Introduction to Statistics
- Population and Sample
- Types of Data
- Measures of Central Tendency
  - Mean
  - Median
  - Mode
- Measures of Dispersion
  - Range
  - Variance
  - Standard Deviation
- Percentiles and Quartiles
- Probability Basics
- Probability Distributions
- Normal Distribution
- Correlation
- Introduction to Regression
- Business Applications of Statistics



SQL FUNDAMENTALS

- Introduction to Databases
- Relational Database Concepts
- Tables, Rows and Columns
- Primary Keys and Foreign Keys
- SQL Syntax
- SELECT Statement
- WHERE Clause
- DISTINCT
- ORDER BY
- LIMIT
- Operators
- GROUP BY
- HAVING

- NULL Values
- Aggregate Functions
    - SUM
    - COUNT
    - AVG
    - MIN
    - MAX

ADVANCED SQL FOR ANALYTICS

- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- Self Join
- Multiple Table Joins
- Subqueries
- Common Table Expressions (CTEs)
- CASE Statements
- String Functions
- Date Functions
- Conditional Aggregation
- Window Functions
- RANK
- DENSE_RANK
- ROW_NUMBER
- LEAD and LAG
- Views
- Stored Procedures – Introduction
- Business Analytics Queries
- Customer and Sales Analytics using SQL



POWER BI FUNDAMENTALS

- Introduction to Business Intelligence
- Introduction to Power BI
- Power BI Desktop
- Connecting to Data Sources
- Excel and CSV Data
- Database Connections
- Importing Data
- Power Query
- Data Transformation
- Data Cleaning
- Filtering Data
- Data Types
- Creating Relationships



- Data Model Fundamentals
- Creating Basic Visualizations
- Tables and Matrix
- Charts and Graphs
- Cards and KPIs

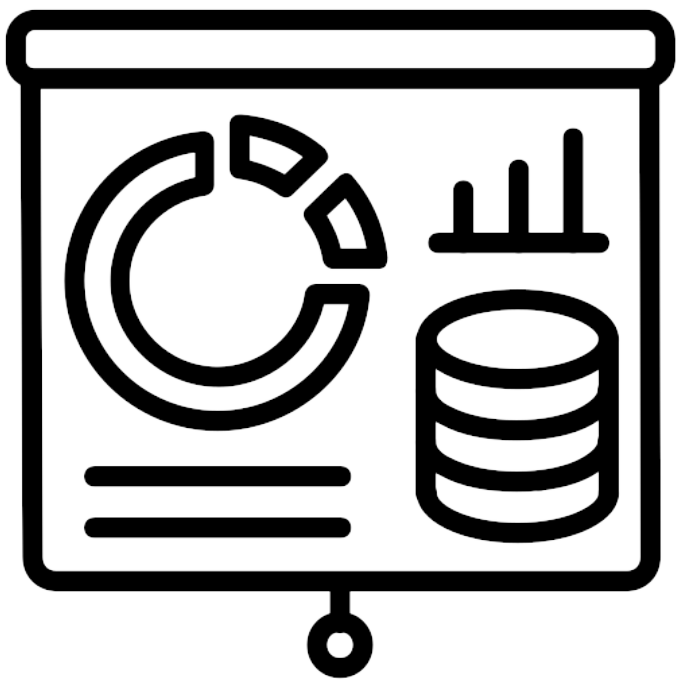
ADVANCED POWER BI & DAX

- Introduction to DAX
- Calculated Columns
- Measures
- DAX Operators
- CALCULATE
- FILTER
- SUMX
- COUNTX
- AVERAGEX
- IF and SWITCH
- Date and Time Intelligence
- Year-to-Date Analysis
- Month-to-Date Analysis
- Year-over-Year Analysis
- Growth Analysis
- KPI Development
- Drill Down
- Drill Through
- Tooltips
- Bookmarks
- Advanced Dashboard Design
- Row-Level Security
- Power BI Service
- Publishing Reports
- Sharing Dashboards



DATA VISUALIZATION & BUSINESS STORYTELLING

- Principles of Data Visualization
- Choosing the Right Chart
- Bar Charts
- Line Charts
- Pie and Donut Charts
- Scatter Plots
- Maps
- KPI Cards
- Dashboard Layout
- Color and Formatting Principles



- Interactive Dashboards
- Data Storytelling
- Presenting Business Insights
- Converting Data into Actionable Recommendations

PYTHON FOR BUSINESS ANALYTICS

- Introduction to Python
- Python Installation and Environment Setup
- Variables and Data Types
- Operators
- Conditional Statements
- Loops
- Functions
- Lists
- Tuples
- Sets
- Dictionaries
- String Operations
- Exception Handling
- File Handling
- Working with CSV and Excel Files



PYTHON FOR DATA ANALYSIS

NumPy

- NumPy Introduction
- Arrays
- Array Operations
- Mathematical Operations
- Statistical Functions

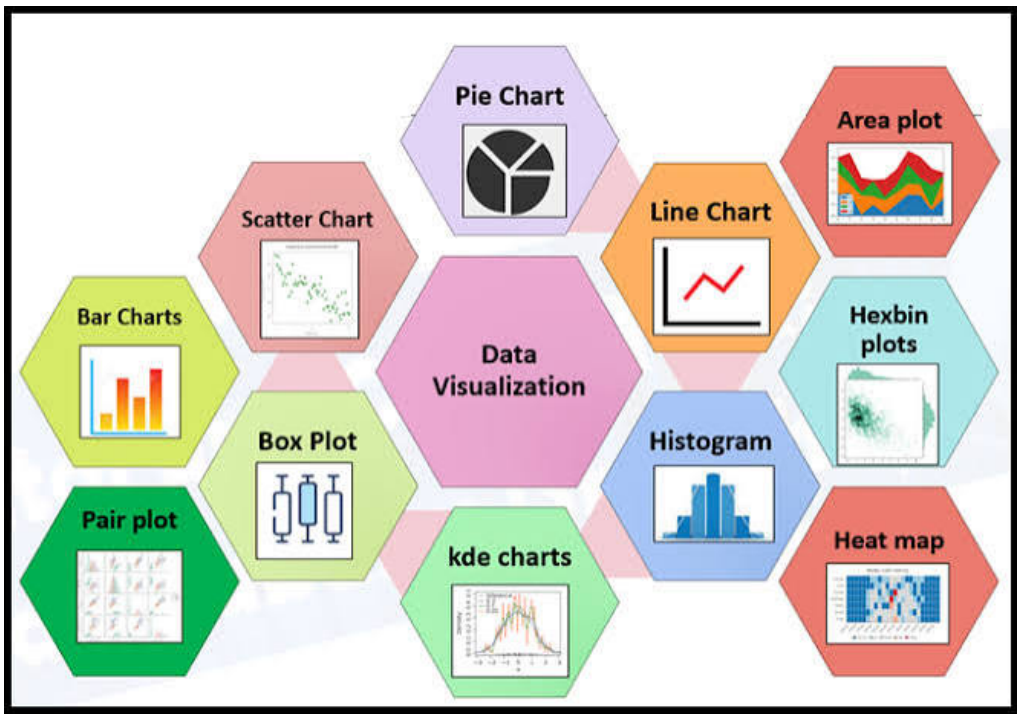


Pandas

- Series and DataFrames
- Importing Data
- Data Selection
- Filtering
- Sorting
- GroupBy
- Aggregation
- Merging Data
- Joining Data
- Handling Missing Values
- Removing Duplicates
- Data Transformation
- Data Cleaning

DATA VISUALIZATION USING PYTHON

- Introduction to Matplotlib
- Introduction to Seaborn
- Line Charts
- Bar Charts
- Pie Charts
- GroupBy
- Histograms
- Box Plots
- Scatter Plots
- Heatmaps
- Distribution Analysis
- Exploratory Data Analysis (EDA)
- Creating Business Reports and Visualizations



ADVANCED STATISTICS

- Introduction to Matplotlib
- Probability Applications
- Hypothesis Testing
- Null and Alternative Hypothesis
- P-Value
- Confidence Intervals
- T-Test
- Chi-Square Test
- ANOVA
- Correlation Analysis
- Regression Analysis
- A/B Testing
- Statistical Decision Making
- Business Applications



BUSINESS INTELLIGENCE & KPI ANALYTICS

- Introduction to Business Intelligence
- Business Metrics
- Key Performance Indicators (KPIs)
- KPI Selection
- Sales KPIs
- Marketing KPIs
- Finance KPIs
- HR KPIs
- Customer KPIs
- Operational KPIs

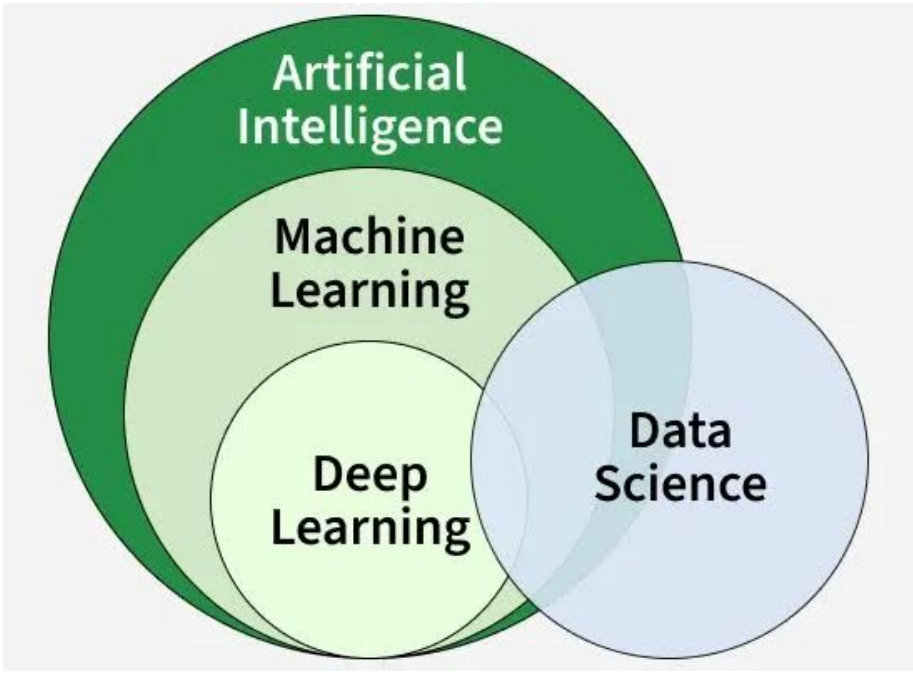
- Business Reporting
- Management Dashboards
- Data-Driven Decision Making

PREDICTIVE ANALYTICS

- Introduction to Predictive Analytics
- Predictive Modeling Concepts
- Feature and Target Variables
- Training and Testing Data
- Linear Regression
- Logistic Regression
- Classification Concepts
- Model Evaluation
- Forecasting Concepts
- Business Forecasting
- Predicting Sales and Customer Behavior

MACHINE LEARNING FOR BUSINESS ANALYTICS

- Introduction to Machine Learning
- Supervised Learning
- Unsupervised Learning
- Regression
- Classification
- Decision Trees
- Random Forest
- Clustering
- K-Means Clustering
- Customer Segmentation
- Model Evaluation
- Business Applications of Machine Learning



GENERATIVE AI FOR BUSINESS ANALYTICS

- Introduction to Generative AI
- AI in Business Analytics
- Using ChatGPT for Data Analysis
- AI-Assisted Excel Analysis
- AI-Assisted SQL Query Generation
- AI-Assisted Python Coding
- Data Cleaning with AI
- Generating Business Insights
- Automated Report Generation
- Creating Business Summaries
- Prompt Engineering for Analytics

- AI-Assisted Dashboard Insights
- Responsible Use of AI in Business Analytics

REAL-TIME BUSINESS CASE STUDIES

Sales Analytics

- Sales Performance Analysis
- Revenue Trends
- Product Performance
- Regional Sales Analysis
- Sales Forecasting

Marketing Analytics

- Campaign Performance
- Customer Acquisition
- Conversion Analysis
- Marketing ROI

Customer Analytics

- Customer Segmentation
- Customer Lifetime Value
- Customer Churn Analysis
- Customer Behavior Analysis

HR Analytics

- Employee Attrition
- Employee Performance
- Recruitment Analytics
- Workforce Analysis

Finance Analytics

- Revenue Analysis
- Expense Analysis
- Profitability Analysis
- Financial Performance Dashboard

REAL-TIME PROJECTS

Students will work on end-to-end projects involving:

Data Collection → Data Cleaning → Data Analysis → Visualization → Dashboard → Business Insights → Recommendations

Project 1: Sales & Revenue Analytics

Tools: Excel, SQL, Power BI

Project 2: E-Commerce Business Analytics

Tools: SQL, Python, Power BI

Project 3: Customer Churn Analysis

Tools: Python, Statistics, Machine Learning

Project 4: Marketing Campaign Analytics

Tools: Excel, SQL, Power BI

Project 5: HR Employee Attrition Analytics

Tools: Python, Power BI

Project 6: Financial Performance Dashboard

Tools: Excel, SQL, Power BI

Project 7: Customer Segmentation

Tools: Python, Machine Learning, Power BI

Project 8: End-to-End Business Intelligence Project

Tools: Excel + SQL + Python + Power BI + Generative AI

INTERVIEW PREPARATION

- Business Analyst Interview Questions
- Excel Interview Questions
- SQL Interview Questions
- Power BI Interview Questions
- Python Interview Questions
- Statistics Interview Questions
- Business Case Studies
- Analytical Thinking Questions
- Scenario-Based Questions
- Dashboard Explanation
- Project Explanation
- Mock Interviews
- HR Interview Preparation

CAREER & PROFESSIONAL DEVELOPMENT

- Business Analyst Resume Building
- ATS-Friendly Resume
- LinkedIn Profile Optimization
- GitHub Portfolio Setup
- Project Portfolio Development
- Business Analytics Portfolio
- Interview Preparation
- Communication Skills
- Presentation Skills
- Business Problem-Solving Skills

- Job Search Strategy
- Placement Preparation

TOOLS & TECHNOLOGIES

Microsoft Excel | SQL | Power BI | Python | NumPy | Pandas | Matplotlib | Seaborn
Statistics | Machine Learning | Generative AI

COURSE OUTCOME

After completing this course, students will be able to:

- Analyze real-world business data
- Clean and transform large datasets
- Write beginner to advanced SQL queries
- Create advanced Excel reports and dashboards
- Develop interactive Power BI dashboards
- Perform statistical analysis
- Use Python for data analysis
- Apply predictive analytics and machine learning
- Use Generative AI for analytics tasks
- Identify business trends and patterns
- Generate actionable business insights
- Present data-driven recommendations
- Build industry-level Business Analytics projects
- Prepare for Business Analyst and Data Analyst interviews

CAREER OPPORTUNITIES

After completing the course, learners can explore roles such as:

- Business Analyst
- Data Analyst
- Business Intelligence Analyst
- Reporting Analyst
- MIS Analyst
- Junior Data Scientist
- BI Developer
- Marketing Analyst
- Sales Analyst
- Financial Analyst
- Operations Analyst
- Product Analyst

Learning Path

BEGINNER

Excel → Data Cleaning → Basic Statistics

⬇️

INTERMEDIATE

SQL → Power BI → Data Visualization → Advanced Statistics

⬇️

ADVANCED

Python → Pandas → EDA → Predictive Analytics

⬇️

EXPERT

Machine Learning → Generative AI → Advanced BI → Real-Time Projects

⬇️

CAREER READY

Portfolio → Resume → Interview Preparation → Mock Interviews



Contact US

D6, Eureka Court, Ameerpet,
Hyderabad, Telangana

+91 9885881244

info@genesisits.com

Mon – Fri: 9:00 AM – 6:00 PM
Sat – Sun: Closed

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