

Data Analytics with AI (Professional Program)

Data Analytics combines statistics, programming, visualization, and business intelligence tools to transform raw data into meaningful insights that support strategic business growth.

The **Data Analytics Professional Course** is suitable for a wide range of academic backgrounds and working professionals. It is especially beneficial for individuals interested in data-driven careers and analytical problem-solving.

Most Relevant Academic & Professional Profiles:

1. Business & Management Students, HR Managers, Health Science Students
2. Economics, Finance & Accounting Students
3. BBA / B.Com / MBA Students, Mathematics & Statistics Students
4. Computer Science / IT Students, Engineers (All Streams)
5. Working Professionals (MIS, Operations, Sales, Marketing)
6. Banking & Financial Sector Professionals, Entrepreneurs & Startup Founders
7. Graduates/Undergraduates seeking career in Data & Analytics

Areas of Work for Professionals

After completing the course, professionals can work in the following roles:

- Data Analyst, Business Analyst, MIS Executive
- Reporting Analyst, Financial Data Analyst
- Operations Analyst, Marketing Analyst
- HR Analyst, Junior Data Scientist

Use of Data Analytics for Professionals

- Improving Business Decision-Making, Identifying Market Trends
- Increasing Operational Efficiency, Reducing Business Risks
- Customer Behavior Analysis, Revenue Forecasting
- Performance Monitoring & KPI Tracking, Strategic Planning & Growth Analysis

Key topics included in this course are:

1). Advance Excel **2).** Google Sheets **3).** Database (MySQL) **4).** VBA Programming **5).** Python Coding **6).** Python for Data Analytics **7).** Statistics & Probability **8).** Power Bi **9).** Tableau for Data Visualization **10).** ChatGPT (Applied AI)

Module 1: Advance Excel for Data Analysis with AI

- Workbook, Worksheet, Workspaces, Row & Column Settings, Calculation Basics in Excel
- References (Relative, Absolute, Mixed), Find & Replacing Data, Auditing, Freeze Panes
- Header & Footer setting, Autofill, Autocorrect, Autoformat, Working with Charts

➤ **Excel Functions**

- **Logical Functions:** (if, Nested if, AND, OR, NOT, XOR, False, True etc)
- **Date and Time Functions:** (Date, Day, Now, Today, Month, Year, Time, Weekday etc)
- **Information functions:** Cell, Error, Isnumber, Iseven, Istext, Type, etc.)
- **Data Analysis Functions:** (DSUM, DMAX, DMIN, DCOUNT, SUMIF, COUNTIFS, DCOUNT etc.)
- **Math & Trignomatrly Functions:** (Rand, Round, MOD, SUMIF, LCM etc.)
- **Statistical Functions:** (Average, COUNTIF, MAX, MIN, Count, Countblank, etc.)
- **String Functions:** (Left, Right, Concat, Mid, Len, Trim, Upper, Lower, Find, search, etc.)
- **Financial Functions:** (PMT, NPV, IRR, FV, PV, etc)

➤ **Data Analysis in Excel (Advance Excel)**

- If And Analysis, What if Analysis, Goal Seek, Solver, Scenarios
- Naming Cell Range (Local and Global), Protecting sheet & workbook
- Importing and Exporting Data, Grouping and Subtotal, Macro (recording tool)/EDITING
- Customizing Sheet/Cells /Rows/Columns, Customizing Excel Window
- Sorting and Filtering Data, Advance Filter, Data Validation
- Power Query, Power Pivot, **Pivot Table, Pivot Chart (Projects)**
- **H Lookup, V Lookup, X Lookup, Consolidation of Sheets, RD CALCULATION**
- Printing Worksheet, Custom List, Working with **Excel CSV files**, Making Excel to **PDF file**

➤ **Live Project on Bulk Data Analysis**

- **Creating Reports with Bulk Data**, Sales Dashboard
- **Automated Payroll Sysem, Inventory Management System**
- **Loan Sheet Preparation** (PPMT, IPMT, PMT), Loan EMI Calcultor

➤ **Use of AI (ChatGPT) to boost Excel productivity**

Module 2 # Google Sheets with AI

Introduction to Google Sheets:

- What is Google Sheets?, Differences from Excel, Navigating the interface

Basic Spreadsheet Skills

- Entering and formatting data, Working with rows, columns, and cells
- Using basic formatting tools (bold, alignment, colors), Undo/redo, copy/paste, and autofill

Basic Functions and Formulas

- Introduction to formulas, Cell references: relative vs. absolute
- Common functions: SUM, AVERAGE, MIN, MAX, COUNT

Organizing and Managing Data

- Sorting and filtering, Freezing rows/columns
- Hiding/unhiding rows/columns, Data validation (dropdowns)

Working with Multiple Sheets

- Adding, renaming, and linking sheets, Cross-sheet references
- Using `IMPORTRANGE` for data from other files

Intermediate Formulas

- `IF`, `IFS`, `AND`, `OR`, `VLOOKUP` and `HLOOKUP`
- `INDEX` and `MATCH`, Error handling with `IFERROR`

Charts and Visualization

- Creating charts (bar, line, pie, combo), Customizing chart appearance, Using sparklines

Collaboration and Sharing

- Sharing settings and permissions, Commenting and suggesting

➤ Advanced Level: Automation & Analysis

Advanced Data Functions

- `QUERY` function deep dive, Pivot tables: creation and customization
- Conditional formatting with custom formulas

Data Import & Cleanup

- `IMPORTDATA`, `IMPORTXML`, `IMPORTHTML`
- Text functions (`SPLIT`, `JOIN`, `TRIM`, `TEXT`, `SUBSTITUTE`), Cleaning messy datasets

Introduction to Scripting

- Introduction to Google Apps Script, Automating tasks with simple scripts

➤ Real-World Projects

- Sales dashboard, Team task manager

Module 3: Database (MySQL) with AI

- Database Terminologies, DDL, DML, DCL
- Constraints (Primary Key, Foreign Key, Unique, Check)
- Introduction to SQL/MySQL, MySQL Workbench Overview
- MySQL Command-Line Interface, Databases, Tables, and Schemas
- Data Types (Int, Numeric, Char, Varchar, Date etc.)
- Integrity Constraints (Primary Key, Unique, Check, Default, Not Null, References)
- Table operations (Creating tables, Altering table, Adding/modifying attributes)
- Creating duplicate table, Renaming a table, Renaming an attribute
- Querying data, Simple select statements, Filtering data with where
- Sorting results with order by, Creating and managing views
- Working with expressions, using logical operators (and, or, not)
- between, not between, Exists, not exists, any, all
- Distinct Clause, Working with NULL values, Table Aliases
- **MySQL Functions**
 - Aggregate Functions (count(), sum(), avg(), min(), max())
 - Arithmetic Functions (ceil(), round(), mod(), floor(), power(), etc)
 - String Functions (concat(), length(), trim(), substring(), instr(), replace(), etc)
 - Date Functions (now(), curdate(), curtime(), date(), month(), day(), year(), etc)
 - Grouping Results (Group By), Placing Conditions on Groups, (Having Clause)
- Correlated Query in MySQL, Nested Queries in MySQL
- Joins (Multi-table joins, Equi join, Cartesian join, Left & right join)
- **Indexes in mysql**
 - Primary Index, Unique Index, Single Column Index, Composite Index
- Exporting and Importing Data in MySQL
- Database Access control using Grant & Revoke
- Windows Functions in MySQL
 - Rownumber(), Rank(), NTILE(), Lead(), Lag(), Last_value() etc

Module 4 # VBA Macro Programming for Automation (with AI)

- **Understanding what VBA (Visual Basic for Applications)**
 - Role of VBA in automating tasks in Microsoft Office applications.
- **Basic VBA Concepts:**
 - Variables, data types, and constants in VBA.
- **Control structures**
 - if statements, loops and logical operators
- **Object-Oriented Concepts in VBA**
 - Understanding Objects, Properties, Methods, Events
 - Working with Workbook, Worksheet, Range Objects deeply
 - Custom Class Modules, Creating your own objects using Class Modules
- **Working with Excel:**
 - Automating data entry, manipulation, and analysis in Excel using VBA macros.
 - Creating, deleting, and formatting worksheets and cells.
 - Using Excel functions and formulas within VBA macros.
 - User Forms and Dialog Boxes
 - Creating custom user interfaces to Getting input using UserForms
- **Event Driven Programming**
 - Workbook Events, Worksheet Events, Application Events
 - Auto-run macros (Workbook_Open, Worksheet_Change etc.)
- **Advanced File & Folder Automation**
 - Looping through folders, Bulk file processing
 - Renaming, copying, deleting files via VBA
- **Error Handling:**
 - Using "On Error" statements, "Resume" statements & other error-handling tools.
- **File Handling:**
 - Opening, saving, and closing workbooks using VBA.
 - Importing and exporting data from/to external files (CSV, text files).
- **Advanced Data Manipulation:**
 - Sorting and filtering data programmatically.
 - Advanced data transformation and analysis using VBA.
 - Working with Charts and Graphs
- **Real-World Automation Projects**
 - Invoice Automation System
 - Payroll /Salary Slip Generator
 - Data Cleaning Tool
 - Automated MIS reporting tool

Module 5 # Python Programming Foundation (Logic Building)

- Importance of Python, Application areas of Python
- Python Installation, Python Implementations
 - (Cpython, JPython, PyPy, IronPython)
- Python Basics & Syntax, Data Types & Operators
- Conditional Statements
 - if-else, if-elif-else, Nested if-else
- Loops & Conditional Statements
 - While and For
 - Nesting of Loops
- Control Statements
 - Break, Continue and Pass
- Working with Strings (String Operations, Functions and Methods)
- Working with List (List Operations, Functions and Methods, Set Operations)
- Sorting and searching operations in Python
- Tuples and Dictionaries in Python
- Functions in Python
 - Function v/s Method, Local and Global variables
 - Positional arguments , Default arguments , Non default arguments ,
 - Function returning values, Nested Functions, Function as argument
- Python Libraries (creating your own Libraries)
 - Python standard libraries, Importing module
 - Math module, Turtle Graphics, Random module
 - Creating a Python Library/package(s), Importing Python Libraries
- File Handling
 - Reading/ Writing/Append Operations
 - Exporting and Importing Data to/from files (Working with CSV files)
- OOP Concepts in Python
 - Class and Objects, Inheritance, Encapsulation, Abstraction
- Exception handling in Python
 - Difference Between Syntax Errors and Exceptions
 - Keywords used in Exception Handling (try , except , finally , raise , assert)
 - Types of Except Blocks, User-defined Exceptions
- Regular Expressions
 - Functions /Methods related to regex, Meta Characters & Special Sequences

Module 6 #: Data Analytics/ Data Visualization Using Python

- Why python for data analysis?
- Essential Python Libraries, Installation on and setup
- Ipython, Jupyter Notebook
- **Python Arrays (NumPy)**
 - Array Attributes, Mathematical Functions, Indexing and slicing
 - Array reshaping, Stacking and splitting arrays, Random Module
 - Performance & Vectorization
- **Python Pandas**
 - Pandas Series, Pandas Dataframes (2-Dimensional)
 - Data aggregation with pandas, Data Indexing and selection
 - Operation on Data in Pandas, loc and iloc map
 - apply, apply_map, group_by, Querying data in pandas, Dealing with dates
 - Reading and Writing to CSV files with pandas
 - Reading and Writing to SQL with pandas
 - Reading and Writing to HTML files with panda
- **Python Matplotlib**
 - Types of plot (Line Plot, Bar Plot, Histogram, Pie Chart, Area Plot)
 - Customizing and Formatting, Multiple Plots & Layout, Saving
 - Working with Data (NumPy Arrays, Panda Series)
- **Python Seaborn**
 - Types of plot (Line Plot, Bar Plot, Histogram, Pie Chart, Area Plot)
 - Customizing and Formatting, Multiple Plots & Layout, Saving
 - Working with Data (NumPy Arrays, Panda Series)
- **Plotly – Python Plotting**
 - Introduction to Plotly – Python Plotting, Plotly
- **Geographical Plotting**
 - Introduction to Geographical plotting, Choropleth Maps
- **Database Connectivity in Python (with MySQL)**
 - MySQL Operations, Database Connection
 - Creating New Database, Creating Tables, Inserting Records in Table
 - Fetching Records from Database Using Python
 - Read Operation using Select, Where,
 - OrderBy etc, Update Operations
 - Join Operations, Performing Transactions

Module 7 #: Statistics, Probability & Business Analytics

- **Overview of Statics**

- Data types and their measures
- Arithmetic Mean, Harmonic Mean, Geometric Mean
- Median, Mode, Variance, Standard Deviation
- Quartile: First quartile, Second quartile, Third quartile, IQR

- **Probability Distribution**

- Introduction of probability, Conditional probability
- Normal distribution, Uniform distribution , Frequency distribution, Central limit theorem

Module 8: Power Bi (Data Visualization & Dashboards) with AI

- Introduction to Power BI, Uses Of Power Bi, The Flow Of Work In Power Bi,
- Working With Power Bi, Basic Components Of Power Bi
- Comparison Of Power Bi Version, Data Model And Importance Of Data Modeling
- Data Sources: How to connect and import data from different sources (Excel etc)

- **Power BI Desktop and Data Transformation**

- Data Sources in Power BI Desktop, Loading Data in Power BI Desktop
- Views in Power BI Desktop, Query Editor In Power BI
- Transform, Clean, Shape, and Model Data
- Manage Data Relationship, Editing a Relationship
- Cross Filter Direction, Saving Workfile, Measures

- **Data Analysis Expression (DAX)**

- Introduction and Importance to DAX, Data Types in DAX
- DAX Calculation Types, Steps to Create Calculated Columns
- Measures in DAX, DAX Syntax, DAX Functions, DAX Operators, DAX Tables and Filtering

- **Data Visualization**

- Introduction to Visuals In Power BI, Visualization Charts in Power BI
- Matrixes and Tables, Slicers and Map Visualizations
- Gauges and Single Number Cards, Modifying Colors in Charts And Visuals
- Shapes, Text Boxes, and Images, Custom Visuals
- Page Layout and Formatting, Bookmarks and Selection Pane
- KPI Visuals, Z-order, Grouping and Binding

- **Power BI Service**

- Introduction to Power BI Service, , Bookmarks and buttons
- Creating a Dashboard, Configuring a Dashboard, Quick Insights in Power BI
- Power BI Q&A, Ask Questions about your Data, Power BI Embedded
- Creating Reports and Dashboards: Building reports by combining visualizations into a cohesive layout and creating interactive dashboards for data exploration (AI for PowerBi)

Module 9 # Tableau for Data Visualization

- What is Tableau?
- Tableau Products (Desktop, Public, Prep, Online, Server)
- Installation & Workspace Overview, - Data Types in Tableau
- Connecting to Different Data Sources (Excel, CSV, SQL, Web, etc.)
- **Working With Data**
 - Data Connection Types (Live vs Extract)
 - Joins (Inner, Left, Right, Full), Using Data Interpreter
 - Data Blending, - Union, Relationships, - Understanding Metadata & Data Pane
- **Basic Visualizations**
 - Bar Chart, Line Chart, Pie Chart, Area Chart
 - Crosstab & Highlight Table, Text Table, Stacked Bars, TreeMaps, Heat Maps
- **Intermediate Visualizations**
 - Dual Axis Charts, Histograms, Box Plots, Scatter Plots, Waterfall Chart
 - Bullet Graph, Pareto Chart, Maps (Filled Map, Symbol Map)
- **Module 5: Calculations in Tableau**
 - Basic Calculations, String Calculations, Number & Date Calculations
 - Logical Functions, Table Calculations (Rank, Running Total, YTD etc.)
 - LOD Expressions (FIXED, INCLUDE, EXCLUDE), Parameter Creation & Use
- **Filters & Sorting**
 - Dimension vs Measure Filters, Context Filters,
 - Top/Bottom Filters, Date Filters, Sorting & Grouping, Sets (Static & Dynamic)
- **Tableau Mapping**
 - Geographic Data Types, Custom Geocoding, Creating Map Layers
 - Density Maps, Path Maps, Spatial Files & Shapefiles
- **Dashboards & Storytelling**
 - Dashboard Layout, Actions (Filter, Highlight, URL)
 - Device Designer, Story Point Creation
 - Dashboard Formatting, Performance Optimization Tips
- **Tableau Prep (Optional)**
 - Cleaning Data, Splits, Pivots & Aggregations
 - Joins & Union in Prep, Output to Tableau Desktop
- **Publishing & Sharing**
 - Publishing to Tableau Server / Tableau Online, Permissions & Authentication
 - Data Extract Refreshes, Dashboard Embedding (Web / Shareable Link)
- **Capstone Projects**
 - Sales Dashboard, HR Analytics Dashboard, Financial KPI Dashboard
 - Supply Chain Dashboard, Real-Time Data Dashboard (using API)

Module 10 # ChatGPT & AI Tools (Applied AI)

Introduction to ChatGPT

- What is ChatGPT and how it works, Versions and features (Free vs Plus)
- Applications in education, business, and daily life

Prompt Engineering Basics

- What is a prompt, How to write effective prompts, Examples: short & detailed prompts

Content Creation Using ChatGPT

- Writing blogs, essays, and captions, Summarizing and rewriting content
- Writing Professional E-mails, Creating Professional Resume
- Generating ideas and creative writing

ChatGPT for Office Productivity

- Using ChatGPT with Excel formulas and analysis
- Drafting letters and reports in Word, Creating PowerPoint slides and scripts with AI

ChatGPT in Business & Freelancing

- Creating marketing content and product descriptions
- Writing emails and proposals, Using ChatGPT for research and data insights

Automation Tools

- Overview of Zapier, Notion, and Google Workspace integration
- Creating smart workflows using AI

Ethics & Responsible AI Use

- Understanding AI limits, Avoiding plagiarism and misinformation, Safe and ethical AI practices

Projects & Assessments

- Real-world ChatGPT tasks (Excel + Content + Automation)
- Mini project submission and feedback, Creating Professional Resume, Applications using AI

AI Image Generation

- Creating AI-generated images using effective and well-structured prompts

Bonus: Working with Other AI tools like Goolge Gemini, Meta AI, Perplexity etc

Part Time: 10 Months X 3 Days/week X 1.5- 2 Hrs || **Full Time:** 5 Months X 6 Days/week X 1.5-2 Hrs

ADD: PLOT No. 8, VAISHALI ENCLAVE, METRO ROAD, PITAMPURA, DELHI-110034
(NEAR GULAB SWEETS , OPP: METRO PILLAR NO. 350)

Website: www.niceitservices.com **Ph:** 9873459848, 7838152268