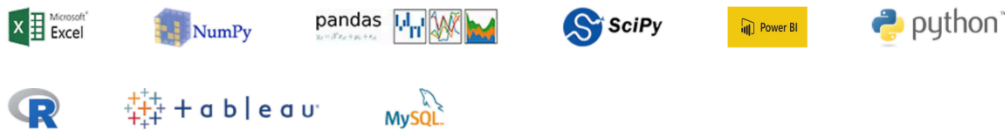


Tools Covered:



Data analytics is one of the trending career domains at present. You can take an online course to learn data analytics from scratch. When selecting a reliable certification course, ensure that its syllabus includes all the important concepts helpful in a data analyst job.

The Data Analytics course syllabus includes topics like analytics tools and techniques, Python or R programming, descriptive statistics, inferential statistics, working with SQL, data blending, hypothesis testing, data extraction, and regression analysis, among others. The Data Analytics course syllabus also includes knowledge of tools like MS Excel, Power BI, NumPy, and Tableau.

Career path for a Data Analyst :

Stepping into the field of data analysis can open your doors to plenty of job opportunities. You may begin as a junior data analyst and climb up the career ladder with roles like senior analyst, data scientist, analytics manager, data architect, and even Chief Data Officer. Conversely, you can take up managerial roles or consultant jobs rather than the usual career track.

Skills you will learn in Data Analytics Course:

The learning path in this Data Analyst course is specifically designed to give you the skills you need to be successful in data analytics and help you obtain a competitive edge. By the end of this Data Analytics certification course training, you will:

- Understand essential statistical concepts including measures of central tendency, dispersion, correlation, and regression
- Master SQL concepts such as Universal Query Tool and SQL command
- Write your first Python program by implementing concepts of variables, strings, functions, loops, and conditions
- Understand the nuances of lists, sets, dictionaries, conditions and branching, objects and classes in Python
- Work with data in Python, including reading and writing files, loading, working, and saving data with Pandas
- Learn how to interpret data in Python using multi-dimensional arrays in NumPy, manipulate DataFrames in pandas, use SciPy library of mathematical routines, and execute machine learning using Scikit-Learn
- Perform data analytics using popular Python libraries
- Gain insights into several data visualization libraries in Python; including Matplotlib, Seaborn, and Folium
- Gain an in-depth understanding of the basics of R, and learn how to write your own R scripts
- Master R programming and understand how various statements are executed in R
- Understand and use linear and non-linear regression models and classification techniques for data analysis
- Learn and use clustering methods including K-means, DBSCAN, and hierarchical clustering
- Gain a foundational understanding of business analytics using Excel
- Get introduced to the latest Microsoft analytics and visualization tools (Power BI)
- Grasp the concepts of Tableau Desktop 10, and become proficient in Tableau statistics and building interactive dashboards
- Become an expert on visualization techniques such as heat map, treemap, waterfall, Pareto, Gantt chart, and market basket analysis

Who should enroll for this Course ?

Aspiring professionals from all educational backgrounds and with an analytical frame of mind are best suited to pursue Data Analytics courses. This includes:

- IT professionals
- Banking and finance professionals
- Marketing managers
- Sales professionals
- Supply chain network managers
- Beginners in the data analytics domain
- Students in UG/ PG programs

Job Opportunities after Data Analytics Course:

Upon completing the Data Analytics certification course, you will have the data analytics skills necessary to get your dream job in the data analytics space. Apart from Data Analyst, other jobs titles include:

- Data Analytics Manager/Lead
- Business Analyst/Senior Business Analyst
- Business Intelligence Analyst
- Business Intelligence Engineer
- Various managerial roles

Data Analytics Certification Learning Path

MODULE 1 : Business Analytics with Excel

Boost your Data analytics career with powerful new Microsoft® Excel skills by taking this Data Analytics course, which includes training on Business Analytics. This combined with an official certificate will put you on the path to a successful career.

Introduction to Business Analytics

- Types of Analytics
- Areas of Analytics

Data Cleaning and Preparation

- Sort and Filter
- Group by and subtotal
- Text to Column
- Removing Duplicates
- Data Validation

Formatting, Conditional Formatting and Important Functions

- Introduction
- Introduction to Custom Formatting
- Custom Formatting Example
- Introduction to Conditional Formatting
- Conditional Formatting : Examples
- Logical Functions
- Lookup and Reference Functions
- VLookup, HLookup Functions
- Match Function
- Index and Offset Function
- Statistical functions
- SUMIFS Function
- COUNTIFS Function

- PERCENTILE and QUARTILE
- STDEV, MEDIAN and RANK Function
- Exercise

Analyzing Data and Pivot Tables

Dashboarding

Business Analytics with Excel

Data Analysis Using Statistics

Using Macros for Analytics

MODULE 2 : SQL

SQL Syntax and Structure:

Review basic SQL statements such as SELECT, INSERT, UPDATE, DELETE, and how they are structured. Understand SQL comments, data types, and naming conventions.

Database Design and Normalization:

Explore database design principles, including normalization to eliminate data redundancy. Learn about primary keys, foreign keys, and how to establish relationships between tables.

SQL Queries:

Write more complex SELECT statements with multiple conditions and sorting. Understand SQL functions (e.g., COUNT, SUM, AVG) for data aggregation. Use GROUP BY and HAVING clauses for grouping and filtering data.

Joins and Subqueries:

Study different types of SQL joins (INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN) to combine data from multiple tables. Learn about subqueries and how to use them in WHERE and HAVING clauses.

Indexes and Performance Optimization:

Explore the concept of database indexes and their impact on query performance. Discuss best practices for optimizing SQL queries.

Data Modification:

Work with SQL statements like INSERT, UPDATE, and DELETE for data modification. Understand transactions and the use of COMMIT and ROLLBACK.

Views and Stored Procedures:

Create and use SQL views to simplify complex queries. Learn about stored procedures and their advantages in database management.

Constraints and Triggers:

Implement constraints (e.g., UNIQUE, NOT NULL) to maintain data integrity. Explore database triggers and how they can automate actions based on data changes.

Advanced SQL Topics:

Dive into advanced SQL concepts like window functions, common table expressions (CTEs), and recursive queries.

Understand working with large datasets, performance tuning, and database security.

SQL Dialects and Variations:

Discuss variations of SQL used in different database systems (e.g., MySQL, PostgreSQL, Oracle, SQL Server).

SQL in Real-World Applications:

Explore case studies and examples of SQL usage in various industries, such as e-commerce, healthcare, and finance.

Security and Data Privacy:

Learn about SQL injection and best practices for securing SQL queries and databases.

MODULE 3: Programming Basics and Data Analytics with Python

Introduction to Python:

Overview of Python as a programming language.

Installation and setup of Python development environment (e.g., Anaconda, Jupyter Notebook).

Python Basics:

Variables, data types (integers, strings, floats), and basic operations.

Control structures: if statements, loops (for and while).

Functions and how to define them.

Data Structures in Python:

Lists, tuples, dictionaries, and sets.

Slicing and indexing.

List comprehensions.

File Handling:

Reading and writing data to files.

CSV and JSON file formats for data storage.

Error Handling:

Introduction to exception handling with try and except.

Introduction to Data Analytics:

Understanding the role of data analytics in decision-making.

Introduction to key data analytics libraries in Python.

NumPy:

Overview of NumPy for numerical operations.

Working with arrays and basic operations.

Array slicing and indexing.

Pandas:

Introduction to Pandas for data manipulation and analysis.
Reading and writing data in various formats (CSV, Excel, SQL).
Data cleaning and preprocessing.

Data Visualization:

Introduction to data visualization libraries like Matplotlib and Seaborn.
Creating basic plots and charts.

Data Analysis and Statistics:

Basic statistical analysis with Pandas (mean, median, standard deviation, etc.).
Grouping and aggregating data.
Hypothesis testing.

Data Cleaning and Preprocessing:

Handling missing data.
Data normalization and scaling.
Data transformation techniques.

Introduction to Machine Learning:

Overview of machine learning and its applications.
Basic concepts like supervised and unsupervised learning.

Data Analytics Projects:

Practical projects that involve collecting, cleaning, analyzing, and visualizing real-world data.

Data Analytics Tools and Libraries:

Introduction to additional libraries like Scikit-Learn for machine learning and libraries for time series analysis.

Best Practices and Ethics:

Discussing best practices in data analytics and the importance of ethical data handling.

Real-World Applications:

Examining case studies and real-world examples of data analytics projects across different industries.

MODULE 4: R Programming for Data Science**Introduction to R:**

Overview of R as a statistical programming language.
Installation and setup of R and RStudio.

R Basics:

Variables, data types (vectors, matrices, data frames), and basic operations.
Control structures: if statements, loops (for and while).
Functions and how to define them.

Data Import and Export:

Reading and writing data from various formats (CSV, Excel, SQL, JSON).

Data exploration and summarization.

Data Manipulation with dplyr:

Introduction to the dplyr package for data manipulation.
Filtering, sorting, grouping, and summarizing data.

Data Visualization with ggplot2:

Introduction to ggplot2 for data visualization.
Creating various types of plots and charts.

Statistical Analysis with R:

Descriptive statistics and inferential statistics.
Hypothesis testing and regression analysis.

Time Series Analysis:

Working with time series data.
Time series visualization and forecasting.

Data Cleaning and Preprocessing:

Handling missing data and outliers.
Data transformation and normalization.

Machine Learning in R:

Introduction to machine learning using packages like caret or randomForest.
Supervised and unsupervised learning techniques.

Advanced Data Visualization:

Interactive visualization with packages like Shiny.
Dashboards and interactive web applications.

Data Analytics Projects:

Practical projects that involve data collection, cleaning, analysis, and visualization.

Data Ethics and Privacy:

Discussion of ethical considerations in data science and the responsible use of data.

R Packages and Libraries:

Introduction to other R packages and libraries used in specific domains, such as geospatial analysis or natural language processing.

Real-World Applications:

Case studies and real-world examples of data science projects across different industries.

MODULE 5: Data Analytics with R

Review of R Fundamentals:

A quick recap of essential R programming concepts and syntax.

Data Import and Data Wrangling:

In-depth exploration of data import from various sources.
Advanced data wrangling using dplyr for data transformation and cleaning.

Data Visualization with ggplot2:

Advanced data visualization techniques using ggplot2.
Customization of plots, themes, and aesthetics.

Statistical Analysis:

In-depth statistical analysis techniques, including multivariate analysis and hypothesis testing.
Implementing statistical models with R.

Time Series Analysis:

Advanced time series analysis with R.
Forecasting methods and time series visualization.

Machine Learning with R:

A deep dive into machine learning using R, including model building, evaluation, and hyperparameter tuning.
Practical implementation of various machine learning algorithms.

Natural Language Processing (NLP):

Introduction to text mining and NLP with R.
Tokenization, sentiment analysis, and text classification.

Geospatial Analysis:

Introduction to geospatial analysis using R.
Creating maps, spatial data manipulation, and geospatial modeling.

Big Data Analytics with R:

Working with big data frameworks like Apache Spark using R.
Distributed computing and large-scale data analysis.

Data Analytics for Specific Domains:

Specialized data analytics topics for different industries, such as finance, healthcare, marketing, or social sciences.

Advanced R Packages and Libraries:

Exploration of advanced R packages for specific data analytics needs, such as caret, xgboost, or text2vec.

Real-World Data Analytics Projects:

Hands-on projects that require advanced data collection, cleaning, analysis, and visualization.

Data Ethics and Privacy in Data Analytics:

Detailed discussions on ethical considerations, data privacy, and responsible data handling in data analytics.

Data Analytics in Business and Decision-Making:

Exploring how data analytics impacts business decisions and strategies.

Presentation and Communication:

Best practices for presenting data analytics results to non-technical stakeholders.
Data storytelling and visualization.

Capstone Project:

A substantial data analytics project that synthesizes all the skills and knowledge acquired during the module.

MODULE 6: Tableau Training

Introduction to Tableau:

Overview of Tableau and its role in data visualization and business intelligence.
Installation and setup.

Connecting to Data Sources:

Importing data into Tableau from various sources (Excel, databases, cloud services).
Data source management.

Data Preparation and Transformation:

Cleaning and transforming data within Tableau.
Joins, unions, and pivot operations.

Basic Visualization:

Creating simple visualizations (e.g., bar charts, line charts, scatter plots).
Applying filters and sorting.

Intermediate Visualization:

More advanced visualization techniques (e.g., maps, treemaps, heat maps).
Customization of colors, shapes, and labels.

Dashboard Creation:

Building interactive dashboards with multiple visualizations.
Actions and parameters for interactivity.

Calculations and Expressions:

Creating calculated fields and using Tableau functions.
Advanced calculations for data manipulation.

Level of Detail (LOD) Expressions:

Understanding and using LOD expressions to control the level of detail in visualizations.

Data Blending:

Combining data from multiple sources for comprehensive analysis.
Joining and blending data in Tableau.

Geospatial Analysis:

Visualizing geographic data and performing geospatial analysis.
Mapping data with custom geocoding.

Advanced Analytics:

Implementing forecasting, trend analysis, and clustering.
Using R and Python integration for advanced analytics.

Server Deployment and Sharing:

Publishing dashboards to Tableau Server or Tableau Online.
Collaborative features and permissions.

Advanced Dashboard Design:

Best practices for creating effective and user-friendly dashboards.
Storytelling with data.

Integration with Other Tools:

Connecting Tableau to other business intelligence and data analytics tools.
Embedding Tableau visualizations in web applications.

Real-World Business Use Cases:

Exploring case studies and practical examples of Tableau in various industries.

Tableau Certification and Best Practices:

Preparation for Tableau certification exams.
Best practices for efficient Tableau use.

Capstone Project:

A comprehensive Tableau project that demonstrates the skills acquired during the training.

MODULE 7: Data Analyst Masters Capstone

Course End Projects(10 Projects):-

Projects that mimic business problems to help apply the concepts learned during a specific course.
Typically these projects take 3 - 4 hours to complete.

Projects are as follows:

1. APP RATING RECOMMENDATIONS

Domain: Technology

The Google Play Store team is launching a new feature that boosts the visibility of certain promising apps. This boost will manifest in multiple ways, including being displayed as a higher priority in the recommendations sections. Make a model predict the app rating, with other information about the app provided.

2. COMCAST TELECOM CUSTOMER COMPLAINTS

Domain: Telecommunications

Comcast is an American global telecommunication company. The firm has been providing terrible customer service and they continue to fall short despite repeated promises of improvement. Utilize the existing database of customer complaints as a repository to find a solution to improving customer satisfaction.

3.E-COMMERCE SALES DASHBOARD

Domain: E-commerce

An online e-commerce company wants to design a sales dashboard to analyze sales based on various product categories. The company wants to make it easier for users to select the products they are looking for and consequently improve sales. Help users select and review information about the products they are considering.

4.COMPARATIVE STUDY OF COUNTRIES

Domain: Geo-political

Create a dashboard to do a comparative study of different countries on various parameters using the sample insurance data set and world development indicators data set.

5.SALES PERFORMANCE ANALYSIS

Domain: Retail

Build a dashboard that shows monthly sales performance by product segment and product category to help clients identify the segments and categories that have met, exceeded, or failed their sales targets.

6.ANALYSIS OF SALES REPORT OF A CLOTHES MANUFACTURING OUTLET

Domain: Manufacturing

A high-end fashion retail store is looking to expand its product line. It wants to understand the market and find the current trends in the industry. Automate the recommendations of the attributes of the products, predict sales trends, understand the factors impacting sales, and regularize the rating procedure of the product with the given data sets.

7.COLLEGE ADMISSION

Domain: Education

Every year, thousands of applications are submitted by international students for admission to colleges in the U.S. It becomes an iterative task for the Education Department to know the total number of applications received and then compare that data with the total number of applications successfully accepted and visas processed. Hence, to make the entire process easy, the education department in the U.S. needs to analyze the factors that influence the admission of a student into colleges.

8.IDENTIFYING AND RECOMMENDING THE BEST RESTAURANTS

Domain: Food

A restaurant consolidator is looking to revamp the B2C portal using intelligent automation technology. This requires creating two different matrices to identify “high-star” restaurants and generate recommendations. To create an effective model, it is critical to understand the behavior of the consumers who are generating the data. You are required to create reports on the top-rated restaurants, generate recommendations by inspecting data and utilizing exploratory data analysis and share your findings with all stakeholders through intuitive dashboards.

9.PREDICTING LOAN DEFAULTERS

Domain: Banking

Financial institutions incur significant losses due to defaults on vehicle loans. This has led to the tightening up of vehicle loan underwriting and increased loan rejection rates. The need for a better credit risk scoring model among these institutions is evident. This warrants a study to estimate the determinants of vehicle loan default rates. Determine and examine factors that affect the ratio of vehicle loan defaulters. Also, use the findings to create a model to predict potential defaults on agreements.

10.EXAMINING FACTORS RESPONSIBLE FOR HEART ATTACKS

Domain: Healthcare

Cardiovascular diseases are one of the leading causes of death globally. Identifying the causes and developing a system to predict potential heart attacks in an effective manner is critical. The data presented has all the information about relevant factors that might have an impact on cardiovascular health. The data needs to be studied in detail for further analysis. Determine and examine the factors that play a significant role in increasing the rate of heart attacks. Also, use the findings to create and predict a model.