CMIT COMPUTER INSTITUTE

Building Bright Careers Since 1989

Diploma In Data Science Course:

CMIT provides quality upskilling opportunities to students and tech professionals. The Data Analytics Course has been crafted to suit both, the market needs and for those who are interested in building their career in a tech domain that is not dominated by coding.
Get Certified through our world class Data Analytics Certification Course powered by IBM.

What does the course offer?

The Data Analytics Course covers technologies like Excel, Advanced Excel, Tableau, SQL, Power BI, and Basics of R & Python. Apart from the theory classes, there are hands-on assignments and projects that help you apply the concepts that are learnt by a student.

Course Curriculum

Topics to Be Covered

- Business Statistics
- Excel: Basics to Advanced
- MySQL / SQL
- Tableau
- Power BI
- R Programming for Data Science
- Python Basics, Libraries

Business Statistics

Descriptive Statistics

Data Types, Measure Of central tendency, Measures of Dispersion

Graphical Techniques, Skewness & Kurtosis, Box Plot

Probability and Normal Distribution

Random Variable, Probability, Probility Distribution, Normal Distribution, SND, Expected Value

Inferential Statistics

Sampling Funnel, Sampling Variation, Central Limit Theorem, Confidence interval

Introduction to Hypothesis Testing

Hypothesis Testing (2 proportion test, 2 t sample t test)

Anova and Chisquare

Data cleaning and Insights

Data Cleaning (Invalid cells, Blanks, Outliers, Null values)

Imputation Techniques (Mean and Median)

Scatter Diagram

Correlation Analysis

Advance Excel

Introduction to Excel: Quantum of Excel and Basics

Workbook, Types of workbooks and their uses (XLSX, XLS, CSV, XLSM and XLSB)

Common uses of Excel

Cell, Row, Column, Range/ Array, Name box

Formatting of cells (Wrap Text, Number, Text, Cell formatting, commenting, etc)

Ribbon, Formula bar, Status bar

Basic operators (+,-,/,*,%,>,<,>=,<=,( ),{ },[ ],&,' ', "" "",!)

Introduction to Functions: Commonly used Excel Functions

What is syntax, arguments (Optional, Mandatory) Navigations using keyboard, shortcuts

Sum, Average, Max, Min, Product

Count Blank, CountA, CountIF, If,Now, Today

Cut, Copy, Paste, Paste Special

Anchoring data: Referencing, Named ranges and its uses

Absolute, Relative, Mixed referencing

Name Manager, Named ranges, Creating Tables

Create functions using named ranges AND/OR referencing

Referring data from different tables: Various types of Lookup, Nested IF

Lookup, Vlookup, Nested Vlookup, Hlookup, Index, Index with Match function

If, If with combination of AND/ OR (multiple ways to get the output), IFERROR

Referring data from different tables: Advanced functions

RANK, RAND, RAND BETWEEN, INDIRECT with ADDRESS & MATCH, OFFSET

Data Handling: Data cleaning, Data type identification, Data restrictions

LEN, LEFT, RIGHT, MID, CONCATENATE, CONCAT, FIND, SUBSTITUTE, TEXT, TRIM

SECOND, MINUTE, HOUR, DAY, WEEK, MONTH, QUARTER, YEAR, WORKDAYINTL

ISNUMBER, ISNA, ISNONTEXT, ISEVEN, ISODD, ISFORMULA, ISERROR

Data validation, Depended drop down, Protecting cell, Array, range, sheet, Workbook

Data Handling: Formatting and Filtering

Conditional formatting (Icon sets/Highlighted color sets/Data bars/custom formatting), Sort, Advanced Sort, Filtering

Data Summarization: Advanced functions, Charts

Sum, Average, Max, Min with IF and IF'S, CountIF'S

Various types of Charts

Data Summerization: Pivots, Preparing the Dashboard

Pivot table, Slicers, Pivot charts, Calculated field, Calculated item, ADD/REMOVE/CHANGE data into the pivot table, Refreshing pivot data

Dashboard creation

Power query, power pivot

Cleaning data, extracting data from multiple sources

Transforming data, imputation techniques. Getting data from CSV files, databases, workbooks, webpages

Power query, power pivot, Use case discussion: Data Preparation, Project Summarization

Consolidating data from multiple sources, merging data from different workbooks/worksheets, relationships.

Use Data handling steps taught in the previous session, Use Data summarization techniques, Populate output in Excel, Combining multiple functions

Intro to Automation: Macros (Recorded /VBA)

How VBA works, Record a sample macro (Recording macros, Absolute mode, relative mode, different methods of executing macros)

VBA

If constructs, Select construct, User defined functions, input box, message box, procedures, automatic macros, methods to clean up the codes

My SQL

Introduction to Databases, Software Installation

Introduction to RDBMS, Explain RDBMS through normalization, Different types of RDBMS

Types of SQL Commands; Data Types in SQL

DDL,DML,DQL,DCL,TCL,Datatypes:int,float,char,varchar,date,date&time,UTC

DDL and DML and TCL commands

DDL:Create,Drop,Rename,Alter,Truncate,DML:Insert,Update,Delete,TCL:Commit,rollback,savepoint

Database Constraints

Domain Constraint, Key Constraint, Referential Integrity Constraint, Primary key, Foreign Key

Operators in SQL

AND, OR, WHERE, IN, NOT IN, BETWEEN, EXIST, NULL

Grouping operations

Select query, Order by, Group by, Having Classes, Aggregating functions

Ranking functions, Analytical functions

Rank, Dense rank, row number, percentile rank, lead and lag functions

Joining Tables

Inner, Left, Right, Cross, Self Joins, Full outer join, Interview Scenarios

Views, Triggers

Simple views, Complex views, Different types of triggers

Introduction to subqueries, different types of subqueries

Explaintion of subqueries with interview scenarios

Indexing, Sequence Objects

B.Tree Index, Hash Index, Unique index, Advantage of Index, Creation of Sequence on primary key column

Stored procedures

Parameters in stored procedures, Exception handling in stored procedures

Tableau

Intro to Tableu Tool

What is data, Types of Data (Structured, Unstructured, Semi Structured), Visualization basics, Different visualizaion tools, Popularity of the tools, Licencing Cost, Different products of Tableau, Installation (student id), ,Connecting to Static files, Mysql

Data pane window

Live Vs Extract, Data source window, Navigating to work sheet, Data pane, Analytics pane, Dimensions, Measures, Auto generated fields, Data visualization window explaination, Data source window operations

Groups, Sets, Parameters

Hierarchy (In built hierarchy, Manual), Grouping , Sets, Parameter with filters and Parameter with Sets, Usage of meausres names and Measure Values

Filters in Tableau

Dual axis, Blended axis, Dimension filters, Measure filters(Record level filters, summary level filters),Date filters, Cascading Filters, Context filters, Data source filters, Extract filters,

Calculated fields

Quick table calculations, Introduction to calculated fields, string calculated fields, Number calculated fields, date calculated fields, logical calculated fields,ZN Function

Data Blending and Joins

Mixing up of all calculated fields, Conditional Formatting in Tableau, Data blending, Data joins, Unions, Relationships, Basic Charts and use cases, Introduction to Show me, Development of In built charts part1,

Charts in Tableau

Development of inbuilt charts part2,Customized graphs(Donut, Waterfall, Bump, Barometer, Butterfly, Gauge meter, Basic Funnel, Advanced Funnel, Word cloud, Gantt Bar),Animated Chart

Reference lines, Bands, Distributions

Arbitary formatting, Explanation of Marks Card, Reference lines, Reference Bands, Reference Distribution

LOD's, Intro to Dashboard, Story

Forecasting, Introduction to Dashboard, Story board interfaces, LOD's (Fixed, Include, Exclude)

Creating a Dashboard

Creating of a Basic Dashboard with both Tiled, Floating layouts, Explanation of objects in the Dashboard interface, Action filters on Dashboards

Creating a Advanced Dashboard

Advanced level dashboard (Drill down dashboards), Designing of Basic Story board

Tableau public server

Publishing Dashboards on Tableau public server, Exposure to the websites which consists of real time data, Interview cracking resources, introduction to Tableau certification

Basics of R

"Introduction to R, Installation of Rstudio, Data Types in R

Data types(Numeric,Char,Logical,Complex,Vector,List,Matrix,Factor,Array,Dataframe),Relational operators, Logical operators

Decision making statements,Loops,Functions

If, If else, for loop, While loop, Repeat, Functions

Built in Functions in R,Joins,dplyr and ggplot2

Merging dataframes, Analyzing Iris Dataset using apply functions, dplyr package (Filter, Sel, Arrange), Data visualization using ggplot2, Scatterplot, Histogram, Boxplot

Anaconda Installation, Introduction to python, Data types, Operators

Variables, data types (integer, Boolean, Float, List, tuple, string), Opearators in python

Data types Control, Slicing the data, Inbuilt functions in python

Dictionaries, Sequence methods, Concatenate, Repetition, len, min, max functions, Index position, Addition and deletion of elements, Reverse, Sorting

Sets, Set Theory, Regular Expressions, Decision making statements

Sets, re module (findall, search, split, match), if, elif Getting input from user, Identity Operators

Loops, Functions, Lambda functions, Modules

For, While loops, Functions, Lambda functions, Math module, Calendar module, Date & time module

Pandas, Numpy, Matplotlib, Seaborn

Data frame creation using different methods, Using Pandas analysis on Universities, Salary data sets, Visualization using Matplotlib and Seaborn, Numpy introduction

Power BI

Power BI Introduction

Introduction to Power BI Desktop
Getting data (Excel and RDBMS, Web, SharePoint)
Naming for Q&A
Direct Query vs Import data

Modelling with Power BI

Introduction to Modelling
Set up and Manager relationships
Cardinality and cross filtering
Creating hierarchy in the model
Default summarization and sort by
Creating calculated columns
Creating measures and quick measures

Power BI Desktop Visualizations

Creating visuals
Colour and conditional formatting
Setting sort order
Scatter and bubble charts and play axis
Tool tips
Slicers, timeline Slicers and sync Slicers
Cross filtering and highlighting
Visual, Page and Report level filters
Drill down/up
Hierarchies
Constant Lines
Tables, Matrix and Table conditional formatting
KPI's, Cards and Gauges
Map Visualizations
Custom visuals

DAX Expressions

Introduction to Dax (how to write Dax and basic functions in Power BI)
Important Dax used in Power BI along with its applications
Introduction to Dax (how to write Dax and basic functions in Power BI)
how to create calculated columns and measures in Power BI and difference in its application
Scenarios with Questions on Dax & explanation
Creating date dimension in Power BI using calendar functions and its importance

Publishing and Sharing

Sharing options
Publish from Power BI Desktop
Publish reports to Web
Sharing reports and Dashboards
Workspaces

Apps
Printing, PDF's and exports
Row level Security
Exporting data from Visualizations Refreshing Datasets
Understanding data refresh
Gateways

Duration : 6 Months (120 Hours)

Tuition Fees : **Rs.60000/-**

Mode of Training : Practical & Hands on + Theory (20%)

Learning Mode : **OFFLINE / HYBRID / ONLINE.**

What is a Data Science?

A data analyst is someone who uses technical skills to analyze data and report insights.

On a typical day, a data analyst might use the following skills:

SQL skills to pull data from a database

Programming skills to analyze that data

Communication skills to report their findings

However, which skills are the most important to land a data analysis job? To answer that question, we performed many hours of research, including interviews with data analysts, data scientists, and hiring managers.

Here's what we learned.

What Skills Does a Data Analyst Need?

Because the data science tools you will use vary depending on the role, the company, or the industry, we learned to focus on skills and not on tools (like Python, R, SQL, Excel, Tableau, Power BI, etc.).

Here's what you'll need to do as a data analyst (not how to do it).

Here are the eight most important data analyst skills:

- Data cleaning and preparation
- Data analysis and exploration
- Statistical knowledge
- Creating data visualizations
- Creating dashboards and reports
- Writing and communication

- Domain knowledge
- Problem solving

And here's an explanation of each . . .

1: Data Cleaning and Preparation

Research shows that data cleaning and preparation will consist of about 80% of the work of most data professionals. That means this skill is vital.

A data analyst will commonly need to retrieve data from one or more sources and prepare it for numerical and categorical analysis. Data cleaning also involves resolving missing and inconsistent data that may affect analysis.

In data analytics, data cleaning isn't always exciting, but preparing data can be fun and challenging when treated as a problem-solving exercise.

Interested in this skill? Check out our beginner-friendly data cleaning courses.

2: Data Analysis and Exploration

It might sound strange to mention "data analysis" in a list of required data analyst skills, but analysis as a specific skill is necessary.

Fundamentally, data analysis involves taking a business question or a need and analyzing relevant data to develop an answer to that question.

Another form of data analysis is exploration. Data exploration involves looking for interesting trends or relationships in the data that could bring value to a business.

A business question might guide exploration, but it also might be relatively unguided. By looking to find patterns in the data, you may stumble across an opportunity for the business to decrease costs or increase growth.

Interested in this skill? Check out our list of data analyst courses.

3: Statistical Knowledge

Probability and statistics are important data analyst skills. This knowledge will guide your analysis and exploration and help you decipher the data.

Additionally, understanding statistics will also help you ensure your analysis is valid, and it will help you avoid common fallacies and logical errors.

The exact level of statistical knowledge necessary will vary depending on the demands of your particular role and the data you're working with.

For example, if your company relies on probabilistic analysis, you'll want a much more rigorous understanding of those areas than you would otherwise need.

Interested in this data analytics skill? Check out our probability and statistics courses.

4: Creating Data Visualizations

Data visualizations clarify data trends and patterns. Humans are visual creatures — that means most people will understand a chart or a graph more quickly than they will understand a spreadsheet.

This means creating clean, visually compelling charts that will help others understand your discoveries. It also means avoiding things that are either difficult to interpret (like pie charts) or that can be misleading (like manipulating axis values).

Visualizations can also be an important part of your data exploration. Sometimes, there are things that you can see visually in the data that can hide when you look only at the numbers.

It's very rare to find a data science role that doesn't require data visualization, which makes it a key data analyst skill.

5: Creating Dashboards and Reports

As a data analyst, you'll need to empower others to use data to make key decisions. By building dashboards and reports, you'll give others access to important data by removing technical barriers.

This might take the form of a simple chart and a table with date filters, or it might be a sophisticated dashboard containing hundreds of interactive data points.

Job descriptions and requirements can vary from position to position, but almost every data analyst job is going to involve producing reports on your findings or building dashboards to showcase them.

Interested in this skill? Learn how to create dashboards and reports with our Power BI courses.

6: Writing and Communication

The ability to communicate in multiple formats is another key data analyst skill. Writing, speaking, explaining, and listening are all communication skills that will help you succeed in any data analytics role.

Communication is key when collaborating with your colleagues. For example, in a kickoff meeting with business stakeholders, careful listening skills help you understand the analyses they require.

Similarly, during your project, you may need to be able to explain a complex topic to non-technical teammates.

Written communication is also incredibly important — especially when you're writing a summary of your analysis or explaining a discovery in your data exploration.

Communicating clearly and directly is a skill that will advance your career in data. It may be a "soft" skill, but don't underestimate it.

The best analytical skills in the world are worthless if you can't explain what they mean and if you can't convince your colleagues to act on your discoveries.

7: Domain Knowledge

Domain knowledge is understanding topics that are specific to the industry and company that you work for.

For example, if you're working for a company with an online store, you might need to understand the nuances of e-commerce.

By contrast, if you're analyzing data about mechanical systems, you might need to understand how those specific systems work.

No matter where you work, if you don't understand what you're analyzing, it'll make executing your job significantly more difficult.

This is certainly something that you can learn on the job. However, if you know a specific industry or area you'd like to work in, then building as much understanding as you can up front will make you a more attractive job applicant — and a more effective employee once you get the job.

8: Problem-Solving

As a data analyst, you're going to run up against problems, bugs, and roadblocks every day. Being able to problem-solve your way out of them is another key skill that will be valuable as a data analyst.

Here are a few potential scenarios:

You might need to research a quirk of some software or coding language that you're using.

Your company might have resource constraints that force you to innovate how you approach a problem.

The data you're using might be incomplete.

You might need to perform some "good enough" analysis to meet a looming deadline.

Whatever the circumstances, strong problem-solving skills are going to be an incredible asset for any data analyst.

Other Data Analyst Skills

The exact definition of "data analyst" varies depending on whom you ask, so it's possible not all of these skills will be necessary for every data analyst job.

Similarly, there may be skills some companies will require that aren't on this list. Our focus here was to find the set of skills that most data analyst roles require in order to build the very best data analyst learning paths for students.

Getting Hired as a Data Analyst

If you want to build the technical skill-set you need to successfully get a data analyst job, check out our interactive online data analysis courses. You'll write real code directly in your browser to analyze real-world data.

FAQs

What is the Difference between Data Analytics?

Data Analytics, Business Analytics and Data Science are the same with just 3 different names. The name of the role of people working in this profession is called as Data Analyst

What if I have no experience in Data Analytics?

Data Analytics is a profession which caught the attention of the world only since 2 years. Because of this very reason most companies are struggling to close the demand-supply gap. Hence, people who are trained and have decent exposure to the data analytics techniques are recruited immediately.

What If I am A Fresher? Can I Still Get A Job In Data Analytics

There are a lot of job opportunities in various job portals for freshers. The key thing employer would be keen to know is whether you have the conceptual knowledge or not. The projects provided by CMIT in various concepts will only reinforce your learning to make you market ready for the jobs.

Do I Need To Have Strong Programming Skills To Be A Data Analyst

Yes and No. Yes in the sense programming skills would be required and No in the sense one need not have extremely strong programming skills. However, we at ExcelR ensure that you get sufficient exposure to the statistical programming tool called 'R'. We start right from the basics assuming you do not have any exposure towards programming.

Why Should We Learn R? Can't We Learn Any Tool For Data Analytics

R has approximately 50% market share and it is open source (free of cost). Hence, R is very lucrative in the analytics space. Almost all the jobs are asking for experience and exposure in R. Demand for other statistical tools is decreasing steadily and hence it is recommended to be futuristic and invest time in learning R.

What Are The Salaries That We Can Expect In The Profession Of Data Analytics

Salaries range varies based on experience, industry, domain, geography and various other parameters. However, as a general thumb rule, we can apply the following formula:

Salary = No. of years of experience * 3 Lakhs per annum (India – INR)

Salary = No. of years of experience * $1200 to $1500 per annum (Overseas – USD)

What is Instructor Led Online Training?

Instructor-led online training is an interactive mode of training where participants and trainer will log in at the same time and live sessions will be done virtually. These sessions will provide scope for active interaction between you and the trainer.

Whom Should I Contact If I Want To Know More Information About The Training?

You can reach out to us by visiting our website and interact with our live chat support team. Our customer service representatives will assist you with all your queries.

Will I Get A Data Analytics Course Completion Certification From CMIT?

Yes, after successfully completing the course you will be awarded a course completion certificate from ExcelR.

What are The Different Modes Of Payment Available?

The different payment methods accepted by us are

- Cash
- Cheque
- Credit Card
- G Pay
- Net Banking / QR Code
- Online Payment (Razor Pay via Link)