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# Microsoft Excel

## Program Highlights

Microsoft Excel is the one of the most used software application of all the time. Hundreds of millions of people around the world use Microsoft Excel. You can use Excel to enter all sorts of data and perform financial mathematical or statistical calculations.

## Excel Introduction

- Overview
- Various Selection Techniques
- Shortcut Keys

## Customizing Excel

- Customizing the Ribbon
- Using and Customizing Autocorrect

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- Changing Excel's Default Option

## Using Basic Function

- Using Function- Sum, Average, Max, Min, Count, Counta
- Absolute, Mixed and Relative Referencing

## Formatting and Proofing

- Formatting Cells with number formats, Alignment, Borders, etc.
- Basic Conditional

## Formatting Mathematical Functions

- Sumif, Sumifs,
- Countif, Countifs,
- Averageif, Averageifs

## Protecting Excel

- File Level Protection
- Workbook, worksheet protection

## Text Functions

- Upper, Lower, Proper
- Left, Mid, Right
- Trim, Len, Exact
- Concatenate
- Find, Substitute

## Date and Time function

- Today, Now
- Day, Month, Year
- Date, Dateif, DateAnd
- EOmonth, Weekday

## Advanced Paste Special Techniques

- Paste formulas, Paste Formats
- Paste Validations
- Transpose Tables

## New in Excel

- New Charts - Tree Map & waterfall
- Sunburst, box, whisker charts
- Combo Charts- Secondary Axis
- Adding Slicer Tool in Pivot & Tables

## Using Power Map and Power View

- Forecast Sheet
- Sparklines - line, Column & win/Loss
- Using 3-D Map
- New Controls in pivot Table - Field, Items and sets
- Various Timelines in pivot Table
- Auto Complete a data range and list
- Quick Analysis Tool
- Smart Lookup and manage store

## Sorting and Filtering

- Filtering on Text, Numbers & colors
- Sorting option
- Advanced Filter on 15-20 Different Criteria

## Printing Workbooks

- Setting up Print Area
- Customizing Header and Footer
- Designing the structure of a template
- Print Titles - Repeats Rows/ Columns

## What if Analysis

- Goal Seek
- Scenario Analysis
- Data Tables (PMT Function)
- Solver Tool

## Logical Function

- If Function
- How to fix Errors - iferror
- Nested if
- Complex if and or function
- Charts and Slicer
- Various Charts i.e. Bar Charts / pie
- charts/Line charts
- Using Slicers , Filter data with Slicers.
- Manage Primary and Secondary Axis

## Data Validation

- Number, Date & Time Validation
- Text and List Validation
- Custom Validations based on formula
- for a cell

- Dynamic Dropdown list creation using
- data Validation-Dependency list

## Lookup Functions

- Vlookup / HLookup
- Index and Match
- Creating Smooth User Interface sing
- Lookup
- Nested Vlookup
- Reverse Lookup using Choose Function
- Worksheet Linking using Choose
- Function
- Worksheet Linking using Indirect
- Vlookup with Helper Column

## Pivot Tables

- Creating Simple Pivot tables
- Basic and Advance Value Field Setting
- Classic Pivot table
- Grouping based on numbers and dates
- Calculated Field & Calculated items
- Arrays Functions
- What are the array Formulas, use of the
- Array Formulas
- Basic Examples of Arrays(Using ctrl+shift+enter)
- Array with if, len and mid function
- formulas
- Advanced use of Formulas with array

## Excel Dashboard

- Planning a dashboard
- Adding Tables and charts to Dashboard
- Adding Dynamic Contents to
- Dashboard

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# POWER BI & BUSINESS ANALYTICS

## About Power BI Certification Course - Overview

- Power BI is BI & Data Visualization Tool by Microsoft way advanced than SSRS by Microsoft
- According to Gartner's Magic Quadrant, it is amongst top 3 BI Tools in Industry
- Since it is a Microsoft Product it is widely used with Ms SQL Server and many other databases. Hence there is huge opportunity in Industry.
- Since it is among Top BI Tools in Industry it is one of High Paying Technologies in Industry
- Pre-requisites To Learn - none. To Implement Basic SQL is required

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# Program Curriculum

## ❖ Introduction to Power BI

- What is Power BI and Why Power BI
- Installing Power BI Desktop
- Exploring the Power BI Workflow
- Adjusting the settings of the Power BI Desktop
- Comparison of Power BI vs Other Reporting Tools

## ❖ Getting and Transforming Data with Power BI Desktop

- Connecting to different sources
- Different connecting Options (Direct Query vs Import Data Vs Live Connection)
- Shaping and transforming data with Power Query
- Editing, Merging, Appending queries etc.

## ❖ Modeling with Power BI

- Introduction to Modeling
- Building Relational Models (Setup and Manage Relationships)
- Creating table relationships
- Understanding the filter flow
- Cardinality and Cross filtering

## ❖ DAX

- Understanding Dax Syntax
- Calculated
- Columns vs Measures
- Common Dax functions and formula
- Understanding the evaluation context in DAX

## ❖ Visualising Data with Reports

- Creating Visualisations
- Color & Conditional Formatting
- Setting Sort Order
- Scatter & Bubble Charts & Play Axis
- Tooltips
- Slicers, Timeline Slicers & Sync Slicers
- Cross Filtering and Highlighting
- Visual, Page and Report Level Filters
- Drill Down/Up
- Hierarchies
- Constant Lines
- Tables, Matrices & Table Conditional Formatting
- KPI's, Cards & Gauges
- Map Visualisations
- Custom Visuals
- Managing and Arranging
- Drill through
- Custom Report Themes
- Grouping and Binning
- Bookmarks & Buttons

## ❖ Introduction to Power BI Service

- Introduction to the Power BI Service
- Quick Tour of Power BI Service
- Connecting to Data from Power BI service
- Building Blocks of Power BI Service

## ❖ Sharing and Collaboration Tools in Power BI Service

- ➢ Sharing and Collaboration Options Overview
- ➢ Publish from Power BI Desktop
- ➢ Publish Reports to Web
- ➢ Printing and Exporting from Power BI Service
- ➢ Sharing Reports & Dashboards
- ➢ Workspaces (My Workspace vs App Workspace)
- ➢ Publishing Apps in Power BI Service
- ➢ Row Level Security in Power BI Desktop and Service

## ❖ Power BI Gateway and Refreshing Datasets

- ➢ Understanding Gateways in Power BI
- ➢ Difference between Personal and On-Premise Gateway
- ➢ Installation of Personal Gateway
- ➢ Installation of On-Premise Enterprise Gateway
- ➢ Setting Up a Gateway in Power BI Service
- ➢ Understanding Data Refresh (Manual vs Scheduled Refresh) ➢ Troubleshooting Refreshing scenarios

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# MySQL

## Program Highlights

SQL Server is a database server by Microsoft the Microsoft relational database management system is a software product which primarily stores and retrieves data requested by other applications. Therefore, a SQL Server is a database server that implements the Structured Query Language (SQL).

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# Program Curriculum

## Introduction to SQL

- Various types of databases
- Introduction to Structured Query Language
- Distinction between client server and file server databases
- Understanding SQL Server Management Studio
- SQL Table basics
- Data types and functions
- Transaction-SQL
- Authentication for Windows
- Data control language
- The identification of the keywords in T-SQL, such as Drop Table

## Database Normalization and Entity Relationship Model

- Entity-Relationship Model
- Entity and Entity Set
- Attributes and types of Attributes
- Entity Sets
- -Relationship Sets
- Degree of Relationship
- Mapping Cardinalities, One-to-One, One-to-Many, Many-to-one, Many-to-many
- Symbols used in E-R Notation

## SQL Operators

- Introduction to relational databases
- Fundamental concepts of relational rows, tables, and columns
- Several operators (such as logical and relational), constraints, domains, indexes, stored procedures, primary and foreign keys
- Understanding group functions
- The unique key

## Working with SQL: Join, Tables, and Variables

- Advanced concepts of SQL tables
- SQL functions
- Operators & queries
- Table creation
- Data retrieval from tables
- Combining rows from tables using inner, outer, cross, and self joins
- Deploying operators such as ‘intersect,’ ‘except,’ ‘union,’

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- Temporary table creation
- Set operator rules
- Table variables

## Deep Dive into SQL Functions

- Understanding SQL functions – what do they do?
- Scalar functions
- Aggregate functions
- Functions that can be used on different datasets, such as numbers, characters, strings, and dates
- Inline SQL functions
- General functions
- Duplicate functions

## Working with Subqueries

- Understanding SQL subqueries, their rules
- Statements and operators with which subqueries can be used
- Using the set clause to modify subqueries
- Understanding different types of subqueries, such as where, select, insert, update, delete, etc
- Methods to create and view subqueries

## SQL Views, Functions, and Stored Procedures

- Learning SQL views
- Methods of creating, using, altering, renaming, dropping, and modifying views
- Understanding stored procedures and their key benefits
- Working with stored procedures
- Studying user-defined functions
- Error handling

## Deep Dive into User-defined Functions

- User-defined functions
- Types of UDFs, such as scalar
- Inline table value
- Multi-statement table
- Stored procedures and when to deploy them
- What is rank function?
- Triggers, and when to execute triggers?

## SQL Optimization and Performance

- Records grouping, advantages, searching, sorting, modifying data
- Clustered indexes creation
- Use of indexes to cover queries
- Common table expressions
- Index guidelines

## Advanced Topics

- Correlated Subquery, Grouping Sets, Rollup, Cube, Rank, CTE, Indexes And Triggers Correlated Subquery, Rollup, Grouping set And Cubes

## Managing Database Concurrency

- Applying transactions
- Using the transaction behavior to identify DML statements
- Learning about implicit and explicit transactions
- Isolation levels management
- Understanding concurrency and locking behavior
- Using memory-optimized tables

## Practice Session

- Creating Transact-SQL queries
- Querying multiple tables using joins
- Implementing functions and aggregating data
- Modifying data
- Determining the results of DDL statements on supplied tables and data
- Constructing DML statements using the output statement
- Querying data using subqueries and APPLY
- Querying data using table expressions
- Grouping and pivoting data using queries
- Querying temporal data and non-relational data
- Constructing recursive table expressions to meet business requirements
- Using windowing functions to group
- Rank the results of a query
- Creating database programmability objects by using T-SQL
- Implementing error handling and transactions
- Implementing transaction control in conjunction with error handling in stored procedures

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- Implementing data types and NULL
- Designing and implementing relational database schema
- Designing and implementing indexes
- Learning to compare between indexed and included columns
- Implementing clustered index
- Designing and deploying views
- Column store views
- Explaining foreign key constraints
- Using T-SQL statements
- Usage of Data Manipulation Language (DML)Designing the components of stored procedures
- Implementing input and output parameters
- Applying error handling
- Executing control logic in stored procedures
- Designing trigger logic, DDL triggers, etc
- Accuracy of statistics
- Formulating statistics maintenance tasks
- Dynamic management objects management
- Identifying missing indexes
- Examining and troubleshooting query plans
- Consolidating the overlapping indexes
- The performance management of database instances
- SQL server performance monitoring


# Data Science

## Python Data Science Course Overview

The Data Science with Python course helps you learn Python programming required for Data Science. In this Data Science with Python training, you will master the technique of how Python is deployed for Data Science, working with Numpy, Pandas library for Data Science, data cleaning, data visualization, Machine Learning for future Predication, advanced numeric analysis, etc., all through real-world projects and case studies.

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# What will you learn in this Python Data Science course?

1. Introduction to Python for Data Science
2. OOP concepts, expressions, and functions
3. What is SQLite in Python? Operations and classes
4. Creating Pig and Hive UDF in Python
5. Deploying Python for MapReduce programming
6. Real-world Data Science projects

# Who should take up this online Data Science with Python certification?

- BI Managers and Project Managers
- Software Developers and ETL Professionals
- Analytics Professionals
- Big Data Professionals
- Those who are wanting to have a career in Python

# Why you should take up this Data Science with Python course?

- ***Python's design and libraries provide 10 times more productivity compared to C, C++, or Java***
- ***A Senior Python Developer in the United States can earn US$102,000/year – Indeed***

Python is one of the best programming languages that is used for the domain of Data Science. ConceptLive is offering the definitive Python for Data Science

course for learning Python coding and running it on various systems such as Windows, Linux, and Mac, which makes it one of the highly versatile languages for the domain of Data Analytics. Upon the completion of this Data Science with Python course training, you will be able to get the best jobs in the Data Science domain at top salaries.

# Program Curriculum

## Introduction to Data Science using Python

- What is Data Science, what does a data scientist do
- Various examples of Data Science in the industries
- How Python is deployed for Data Science applications
- Various steps in Data Science process like data wrangling, data exploration and selecting the model.
- Introduction to Python programming language
- Important Python features, how is Python different from other programming languages
- Python installation, Anaconda Python distribution for Windows, Linux and Mac
- How to run a sample Python script, Python IDE working mechanism
- Running some Python basic commands
- Python variables, data types and keywords.

## Python basic constructs

- Introduction to a basic construct in Python
- Understanding indentation like tabs and spaces
- Python built-in data types
- Basic operators in Python
- Loop and control statements like break, if, for, continue, else, range() and more.

## Data Structure and Algorithm

- Introduction of Data Structure
- What is List, Tuple, Array, Map, Dictionary, Set and more.
- dict: Your Go-To Dictionary
- collections.OrderedDict: Remember the Insertion Order of Keys
- collections.defaultdict: Return Default Values for Missing Keys
- collections.ChainMap: Search Multiple Dictionaries as a Single Mapping
- types.MappingProxyType: A Wrapper for Making Read-Only Dictionaries
- Dictionaries in Python: Summary
- set: Your Go-To Set
- frozenset: Immutable Sets
- collections.Counter: Multisets
- Sets and Multisets in Python: Summary
- list: Manually Sorted Queues
- heapq: List-Based Binary Heaps
- queue.PriorityQueue: Beautiful Priority Queues
- Priority Queues in Python: Summary

## NumPy for Mathematical Computing

- Introduction to mathematical computing in Python
- What are arrays and matrices, array indexing, array math, Inspecting a NumPy array, NumPy array manipulation

## Pandas for Data manipulation

- What is a data Manipulation? Using Pandas library
- NumPy dependency of Pandas library
- Series object in pandas
- DataFrame in Pandas
- Loading and handling data with Pandas
- How to merge data objects
- Concatenation and various types of joins on data objects, exploring dataset

## Data Visualization with Matplotlib

- Introduction to Matplotlib
- Using Matplotlib for plotting graphs and charts like Scatter, Bar, Pie, Line,
- Histogram and more
- Matplotlib API

## Maths for DS-Statistics & Probability

- Central Tendency
- Variability
- Hypothesis Testing
- Anova
- Correlation
- Regression
- Probability Definitions and Notation
- Joint Probabilities
- The Sum Rule, Conditional Probability, and the Product Rule
- Bayes Theorem

## Machine Learning using Python

- Revision of topics in Python (Pandas, Matplotlib, NumPy, scikit-Learn)
- Introduction to machine learning
- Need of Machine learning
- Types of machine learning and workflow of Machine Learning
- Uses Cases in Machine Learning, its various algorithms
- What is supervised learning
- What is Unsupervised Learning

## Supervised learning-Linear Regression

- What is linear regression
- Step by step calculation of Linear Regression
- Linear regression in Python

## Supervised learning-Logistics Regression

- Logistic Regression
- What is classification
- Decision Tree, Confusion Matrix, Random Forest, Naïve Bayes classifier (Self paced), Support Vector Machine(self paced), XGBoost (self paced)

## Unsupervised learning and K Means Clusturing

- Introduction to unsupervised learning
- Use cases of unsupervised learning
- What is clustering
- Types of clustering(self-paced)-Exclusive clustering, Overlapping Clustering, Hierarchical Clustering(self-paced)
- What is K-means clustering
- Step by step calculation of k-means algorithm
- Association Rule Mining(self-paced), Market Basket Analysis(self-paced), Measures in association rule mining(self-paced)-support, confidence, lift
- Apriori Algorithm

## Hire Clustering And Dimention Reduction

- Introduction to Dimensionality
- Why Dimensionality Reduction
- PCA
- Factor Analysis
- LDA

## Time Series Forecasting

- White Noise
- AR model
- MA model
- ARMA model
- ARIMA model
- Stationarity
- ACF & PACF

## OOPs in Python

- Understanding the OOP paradigm like encapsulation, inheritance, polymorphism and abstraction
- What are access modifiers, instances, class members
- Classes and objects
- Function parameter and return type functions
- Lambda expressions.

## Python Integration with Spark

- Introduction to PySpark
- Who uses PySpark, need of spark with python
- PySpark installation
- PySpark fundamentals
- Advantage over MapReduce, PySpark
- Use-cases PySpark and demo.