DATA SCIENCE

WHY DATA SCIENCE?

Data science is an interdisciplinary field that involves the collection, analysis, interpretation, and presentation of large amounts of data to gain insights and make informed decisions. It combines various techniques and methods from statistics, mathematics, computer science, and domain knowledge to extract meaningful patterns and knowledge from complex and often unstructured data.

The goal of data science is to discover valuable information and actionable insights from data in order to solve problems, make predictions, optimize processes, and support decision-making. It involves the entire data lifecycle, including data acquisition, data cleaning and preprocessing, exploratory data analysis, modeling and algorithm development, evaluation, and communication of results.

Data science finds applications in various fields, including finance, healthcare, marketing, social sciences, engineering, and many others. It helps organizations make data-driven decisions, uncover patterns and trends, develop predictive models, optimize processes, and improve overall performance.

Overall, data science is a rapidly growing and evolving field that plays a crucial role in extracting insights and value from the vast amounts of data generated in today's digital age.

ABOUT THE COURSE

This comprehensive data science course is designed to provide students with a solid foundation in the key concepts and tools used in data analysis, machine learning, and artificial intelligence. The course is ideal for students who want to learn the latest techniques and technologies for working with data and applying statistical analysis to real-world problems.

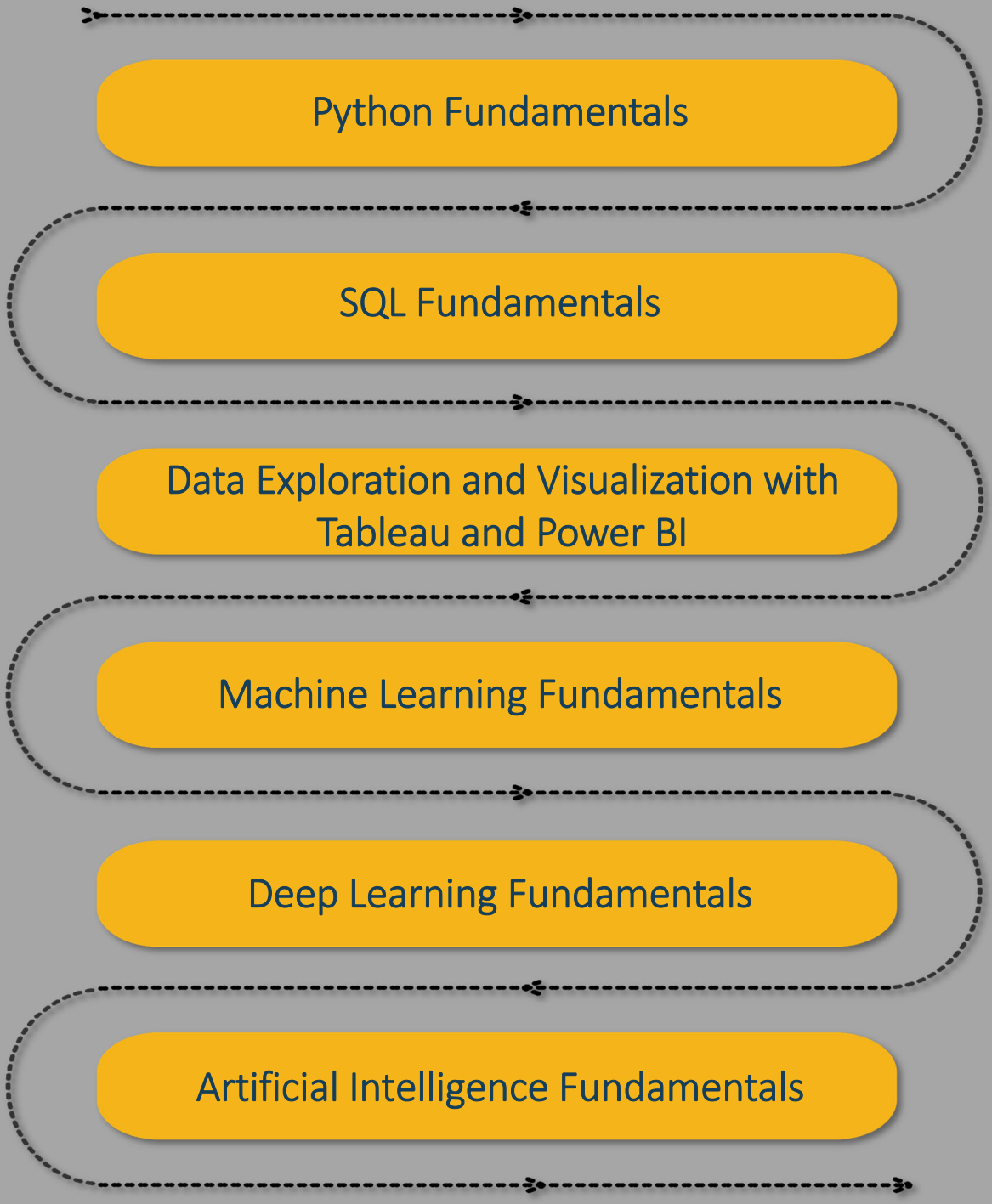
Throughout the course, students will learn how to use Python and SQL to perform data manipulation and analysis, how to build and apply machine learning and deep learning algorithms, and how to use popular tools such as Tableau and Power BI to visualize and present data insights.

The course is divided into six modules, each focusing on a different aspect of data science:

Module 1: Python Fundamentals
Module 2: SQL Fundamentals
Module 3: Data Exploration and Visualization with Tableau and Power BI
Module 4: Machine Learning Fundamentals
Module 5: Deep Learning Fundamentals
Module 6: Artificial Intelligence Fundamentals

Each module includes mix of all live sessions to reinforce key concepts and skills, interactive exercises along with live doubt clearing sessions. Additionally, each module includes live projects and assessments to give students hands-on experience with real-world data science problems. Upon completion of the course, students will have a solid understanding of the core concepts and tools used in data science and will be equipped with the skills and knowledge needed to work on complex data science projects.

JOURNEY IN DATA SCIENCE.



Module 1: Python Fundamentals (40 hours)

Python basics: variables, data types, operators, and expressions

- Data types: integers, floats, booleans, strings, and lists
- Operators: arithmetic, logical, and comparison
- Expressions and statements

Control structures: loops, conditionals, and functions

- If-else statements and conditional expressions
- Loops: for and while
- Functions: syntax, parameters, and return statements
- Recursion

Object-oriented programming concepts: classes, objects, and inheritance

- Class definitions: instance variables, methods, and constructors
- Objects: creating and using objects, passing objects as arguments
- Inheritance: extending classes, method overriding, and super()

Introduction to data structures: lists, tuples, and dictionaries

- Lists: indexing, slicing, appending, and sorting
- Tuples: creating, packing and unpacking, and iterating
- Dictionaries: creating, accessing, and updating key-value pairs

Input and output operations with files

- Reading and writing text files
- Handling exceptions and errors
- Using the OS and SYS modules

Module 2: SQL Fundamentals (30 hours)

Relational databases: tables, records, and fields

- Creating tables and defining relationships
- Inserting data into tables
- Updating and deleting data from tables
- Using aggregate functions

SQL basics: SELECT, INSERT, UPDATE, DELETE statements

- SELECT statement: querying data from one or multiple tables
- INSERT statement: adding data to a table
- UPDATE statement: modifying existing data
- DELETE statement: removing data from a table

Querying multiple tables with joins

- Inner, left, right, and full outer joins
- Self-joins and subqueries
- Using aliases and aggregate functions with joins
- Using union and intersect operators

Aggregating data with GROUP BY and HAVING clauses

- Grouping data by one or more columns
- Using aggregate functions with GROUP BY
- Filtering groups with the HAVING clause
- Using nested queries with GROUP BY and HAVING

Subqueries and correlated subqueries

- Using subqueries in SELECT, FROM, WHERE, and HAVING clauses
- Comparing subqueries with joins
- Using correlated subqueries

Module 3: Data Exploration and Visualization with Tableau and Power BI (30 hours)

Introduction to Tableau and Power BI

- Getting started with Tableau and Power BI
- Connecting to data sources
- Creating visualizations and dashboards
- Sharing and publishing reports

Creating charts, graphs, and maps

- Creating basic charts and graphs
- Using different chart types
- Adding labels, titles, and annotations
- Creating geographic maps

Calculated fields and table calculations

- Creating calculated fields
- Using basic arithmetic and logical operators
- Using aggregate functions in calculated fields
- Creating table calculations

Interactive dashboards and storyboards

- Creating interactive dashboards
- Using filters and parameters
- Adding interactivity with actions
- Creating a storyboard with Tableau and Power BI

Module 4: Machine Learning Fundamentals (40 hours)

Introduction to Machine Learning

- Supervised vs unsupervised learning
- Linear regression
- Model evaluation metrics

Classification algorithms

- Decision trees
- Random forests
- Naive Bayes

Clustering algorithms

- K-means
- Hierarchical clustering

Dimensionality Reduction techniques

- PCA
- t-SNE

Model selection and tuning

- Grid search
- Cross-validation

Module 5: Deep Learning Fundamentals (40 hours)

Introduction to Neural Networks

- Feedforward neural networks
- Backpropagation algorithm
- Activation functions

Convolutional Neural Networks (CNN)

- Image classification
- Object detection

Recurrent Neural Networks (RNN)

- Sequence modelling
- Sentiment analysis

Autoencoders and Generative Adversarial Networks (GAN)

- Image generation
- Image to Image Translation

Module 6: Artificial Intelligence Fundamentals (25 hours)

Introduction to AI

- Agents and environments
- Search algorithms

Logic and Planning

- Propositional logic
- First-order logic
- Planning

Natural Language Processing (NLP)

- Text classification
- Information extraction
- Sentiment analysis

Robotics

- Kinematics and dynamics
- Path planning
- Control

COURSE DURATION:

100+ Live Sessions for 4Months/200+ hours.
20+ Live Projects & Case Studies

WEEKLY TRAINING:

6 Days a Week

Monday-Friday: **Live Training + Doubt session(1.5 hrs + 30mins)**
Saturday: **Live Projects & Assessments(2 hrs)**

PLACEMENT OPPORUNITY:

Guaranteed Internship
Placement Assistance
Mock Interviews
Resume Building

ADDITION BENEFITS:

Life time access of classes will be given
Recordings of Classes & PDF Notes will be provided
24*7 Trainer & Counselling Support

The Course is ISO 9001:2016 certified.

"Your Dreams, Our Guidance"

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