



GETIN TECHNOLOGIES

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COURSE NAME: DATA SCIENCE TRAINING

Module 2

[Visit our website for Course Fees and Course Duration](#)

Placement Eligibility:

Eligible: Any Bachelor Degree, Any Master Degree, MBA

Not Eligible: Diploma

Class Mode:

Classroom | Online | Recorded Session | AI Session

If you have Completed Course, You want only Placements

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DATA SCIENCE COURSE 2 SYLLABUS

SQL:

Introduction

- The Relational Model

Understanding Basic SQL Syntax:

- Basic SQL Commands – SELECT
- Basic SQL Commands – INSERT
- Basic SQL Commands – UPDATE
- Basic SQL Commands – DELETE

Querying Data with the SELECT Statement:

- The SELECT List
- SELECT List Wildcard (*)
- The FROM Clause
- How to Constrain the Result Set
- DISTINCT and NOT DISTINCT

Filtering Results with the Where Clause:

- WHERE Clause
- Boolean Operators
- The AND Keyword
- The OR Keyword
- Other Boolean Operators BETWEEN, LIKE, IN, IS, IS NOT

Shaping Results with ORDER BY and GROUP BY:

- ORDER BY

- Set Functions
- Set Function And Qualifiers
- GROUP BY
- HAVING clause

Matching Different Data Tables with JOINS:

- CROSS JOIN
- INNER JOIN
- OUTER JOINS
- LEFT OUTER JOIN
- RIGHT OUTER JOIN
- FULL OUTER JOIN
- SELF JOIN

Creating Database Table stamp:

- CREATE DATABASE
- CREATE TABLE
- NULL Values
- PRIMARY KEY
- CONSTRAINT
- ALTER TABLE
- DROP TABLE

PYTHON:

Introduction to Python

- What is Python and the history of Python?
- Unique features of Python
- Install Python and Environment Setup
- First Python Program
- Python Identifiers, Keywords, and Indentation

- **Comments and document interlude in Python**
- **Command-line arguments**
- **Getting User Input**
- **Python Data Types**
- **What are the variables?**

Control Statements

- **If**
- **If-elif-else**
- **while loop**
- **for loop**
- **Break**
- **Continue**
- **Assert**
- **Pass**
- **return**



List, Ranges & Tuples in Python

- **Introduction**
- **Lists in Python**
- **Generators and Yield**
- **Generators Comprehensions and Lambda Expressions**
- **Next() and Range()**
- **Understanding and using Range**

Python Dictionaries and Sets

- **Introduction to the section**
- **Python Dictionaries**
- **More on Dictionaries**
- **Sets**

Python built-in function

- Python Modules & Packages
- Python User defined functions
- Defining and calling Function
- The anonymous Function

Python Object Oriented

- Overview of OOP
- Creating Classes and Objects
- Constructor
- The self variable
- Types Of Variables
- Namespaces
- Inheritance
- Types of Methods
- Instance Methods Static Methods Class Methods
- Accessing attributes
- Built-In Class Attributes
- Destroying Objects
- Abstract classes and Interfaces
- Abstract Methods and Abstract class
- Interface in Python
- Abstract classes and Interfaces

MACHINE LEARNING:

Introduction to Machine Learning:

- What is Machine Learning?
- Types of Machine Learning (Supervised, Unsupervised, Reinforcement Learning)

- Applications of Machine Learning
- Python and Libraries for Machine Learning (NumPy, Pandas, Scikit-Learn)

Data Preprocessing

- Data Cleaning and Exploration
- Feature Engineering
- Data Scaling and Normalization
- Handling Missing Data

Machine Learning Techniques

- Types of Learning
- Supervised Learning
- Unsupervised Learning
- Advice for Applying Machine Learning
- Machine Learning System Design

Supervised Learning

- Regression
- Classification

Supervised Learning - Regression

- Linear Regression & Logistic: A Model-Based Approach
- Regression fundamentals : Data and Models
- Feature selection in Model building
- Evaluating over fitting via training/test split
- Training/ Test curves
- Adding other features
- Regression ML block diagram

Supervised Learning - Classification

- **Classification fundamentals : Data and Models**
- **Understanding Decision Trees and Naive Bayes**
- **Feature selection in Model building**
- **Linear classifiers**
- **Decision boundaries**
- **Training and evaluating a classifier**
- **False positives, false negatives, and confusion matrices**
- **Classification ML block diagram**

Unsupervised Learning

- **Clustering**
- **Recommendation**
- **Deep Learning**

Unsupervised Learning - Clustering

- **Clustering System Overview**
- **Clustering fundamentals : Data and Models**
- **Feature selection in Model building**
- **Prioritizing important words with tf-idf**
- **Clustering and similarity ML block diagram**

Unsupervised Learning - Deep Learning

- **Deep Learning: Searching for Images**
- **Learning very non-linear features with neural networks**
- **Application of deep learning to computer vision**
- **Deep learning performance**
- **Demo of deep learning model on ImageNet data**
- **Deep learning ML block diagram**

Natural Language Processing (NLP)

- **Text Preprocessing**

- Bag of Words and TF-IDF
- Sentiment Analysis
- Text Classification
- Word Embeddings (Word2Vec, GloVe)

Neural Networks and Deep Learning

- Introduction to Neural Networks
- Feedforward Neural Networks
- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)
- Transfer Learning and Pretrained Models

Reinforcement Learning

- Introduction to Reinforcement Learning
- Markov Decision Processes (MDPs)
- Q-Learning
- Deep Q-Networks (DQN)
- Policy Gradient Methods

Model Deployment and Production

- Model Serialization
- REST APIs for Model Deployment
- Cloud Services for Model Deployment