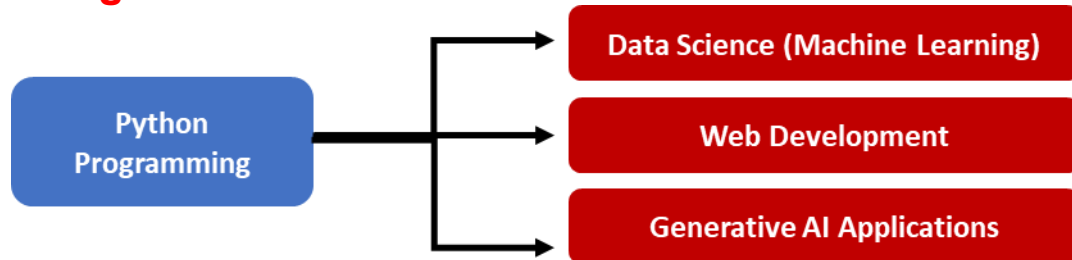# Python Programming

This course gets you started with programming using Python language and covers all programming concepts and important libraries of Python Language to prepare you either for Data Science (Machine Learning) or Web Application development or Generative AI Application.

Learning Path

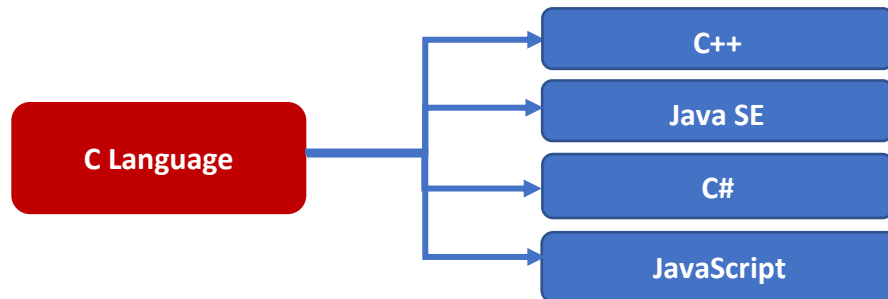| Prerequisite	Computer Fundamentals (Knowledge of programming is recommended)
Course Fee	Rs. 7500/- (Includes digital course material + Test Your Python Knowledge Udemy Course)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	36 Hours

Major Topics

- ❒ Introduction to Programming and Python
- ❒ Language Elements
- ❒ Data Structures – List, Tuple, Set and Dictionary
- ❒ User-defined functions
- ❒ Modules and Packages
- ❒ OOP With Python – Creating classes and objects
- ❒ Inheritance and Multiple Inheritance
- ❒ Exception Handling
- ❒ Iterators and Generators
- ❒ File Handling, Serialization, Modules – os, sys, datetime
- ❒ Regular Expressions and JSON
- ❒ Requests and BeautifulSoup (Web Scraping)
- ❒ Database Programming – DB API 2.0

C Language

This course teaches how to write programs using C language. This is the first step in the journey of programming. This course, designed for absolute beginners, will transform a non-programmer to programmer.

Learning Path

Prerequisite	Computer Fundamentals
Course Fee	Rs. 4500/- (Includes printed course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	30 Hours

Major Topics

- ❏ Introduction to Programming
- ❏ Language Elements
- ❏ Control Statements – if, switch and loops
- ❏ Characters Handling
- ❏ Arrays, Multidimensional Arrays and Strings
- ❏ User-defined functions
- ❏ Pointers
- ❏ Structures, Unions, Typedef and Enumeration
- ❏ Pre-processor commands
- ❏ File Handling
- ❏ Linked List

Java SE (Core Java)

This course teaches object-oriented programming using Java Language and how to make use of standard library provided by Java SE.

Learning Path

C Language	→	Java SE	→	Java EE

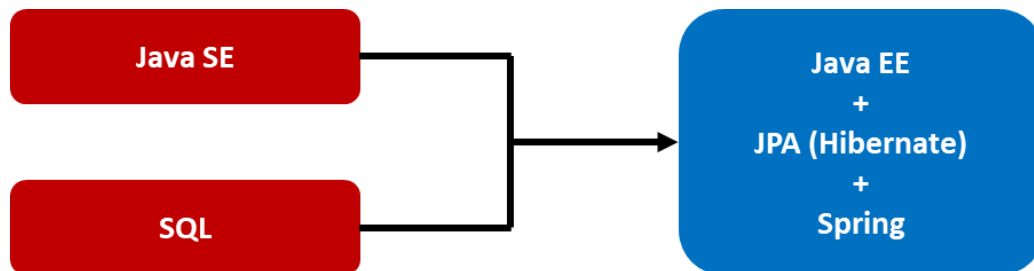|	
Prerequisite	**C Language**
Course Fee	**Rs. 6000/- (Includes digital course material)**
Digital or Physical Certificate Fee	**Rs. 300/-**
Duration	**36 Hours**

Major Topics

- ❏ **Java Language Fundamentals**
- ❏ **Object Oriented Programming**
- ❏ **Using Java core libraries like String, Object, Arrays, LocalDate, Math etc.**
- ❏ **Interfaces, Packages and Nested Classes**
- ❏ **Exception Handling**
- ❏ **Multithreading**
- ❏ **JShell, Text Blocks, Records, Switch Expressions and Sealed Classes**
- ❏ **IO Streams and New IO**
- ❏ **Network Programming**
- ❏ **Collections Framework**
- ❏ **Regular Expressions**
- ❏ **Lambda Expressions and Streams**

Java EE + JPA (Hibernate) + Spring

This course teaches how to develop web applications and REST API using Java EE, JPA (Hibernate) and Spring. It is a must-to-learn course for anyone interested in developing web application and REST API using Java.

Learning Path

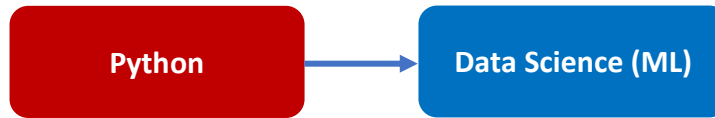| Prerequisite	Java Language (Java SE) and SQL
Course Fee	Rs. 7000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	36 Hours

Major Topics

- ❐ JDBC - Java Database Connectivity
- ❐ Java Servlets, Listeners, Filters and JSP
- ❐ State management in Web Applications
- ❐ JSTL (Java Server Pages Tag Library)
- ❐ JPA using Hibernate
- ❐ Spring Boot Core – IOC and AOP
- ❐ Spring Data JDBC
- ❐ Spring Data JPA
- ❐ Spring MVC
- ❐ Spring REST
- ❐ Spring Security

Data Science (Machine Learning)

This course teaches how to analyse, visualize data and build machine learning models using Python and libraries like Pandas, Matplotlib, Scikit-Learn etc.

Learning Path

Prerequisite	Python Language
Course Fee	Rs. 7500/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	36 Hours

Major Topics

- ❑ Introduction to Data Science
- ❑ Working with Anaconda and Jupyter Notebook
- ❑ Basic Statistics and related libraries
- ❑ Numpy
- ❑ Pandas
- ❑ Matplotlib
- ❑ Seaborn
- ❑ Data Science Workflow (Life Cycle)
- ❑ Classification case study
- ❑ Sentiment Analysis case study
- ❑ Regression case study
- ❑ Regularization, Pipeline, GridSearch, Gradient Descent etc.
- ❑ Clustering case study
- ❑ Recommender System case study

AWS Cloud Practitioner

This course teaches how cloud works and how to use important services like Compute, Networking, Storage, Database, Security, Serverless Applications and Monitoring in AWS.

It is also meant to prepare you for AWS Cloud Practitioner Exam.

Prerequisite	**Basics knowledge of computers**
Course Fee	**Rs. 4500/- (Includes digital course material)**
Digital or Physical Certificate Fee	Rs. 300/-
Duration	24 Hours

Major Topics

- ❒ **What is Cloud and its advantages**
- ❒ **Compute**
- ❒ **Networking**
- ❒ **Security**
- ❒ **Storage**
- ❒ **Databases**
- ❒ **Serverless Applications**
- ❒ **Monitoring & Managing**
- ❒ **Cost Optimization**

Full-Stack Web Development

This course covers all topics like JavaScript, Node.js, Express.js, MySQL, React and AJAX that enable you to develop a Full-Stack Web Application using Node + Express + MySQL + React.

At the end of this course, you will have acquired the skills to build a complete web application where Front-End developed using React connects to Back-End developed using Node + Express + MySQL.

Prerequisite	Basics of Programming, Basics of HTML and CSS
Course Fee	Rs. 7000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	36 Hours

Major Topics

❒ JavaScript

❒ AJAX and JSON

❒ MySQL

❒ Node.js

❒ Express.js

❒ React

❒ Capstone Project

Power BI

This course teaches how to retrieve, analyse, clean, transform and model data to generate user-friendly reports, which can be exported, printed and shared, using Power BI.

Prerequisite	Basic Knowledge of Database Tables and Relationships
Course Fee	Rs. 6000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	24 Hours

Major Topics

- ☐ Introduction to Business Intelligence
- ☐ Power BI Desktop
- ☐ Power BI Service
- ☐ Retrieving data from different data sources
- ☐ Analysing data and understanding insights
- ☐ Clean, Transform and Load Data
- ☐ Building semantic models and establishing relationships
- ☐ Creating new tables, computed columns and measures
- ☐ Building Reports with different Visuals
- ☐ Formatting, Filtering and slicing Reports
- ☐ Workspaces and Dashboards
- ☐ Sharing and Exporting Reports

SQL Bootcamp

This course gets you started with Database and SQL and takes you to a stage where you understand database concepts and write quality queries.

This is primarily designed for anyone who wants to know what is Database and how to use it either for Data Analysis and Reporting or to store and manipulate business data.

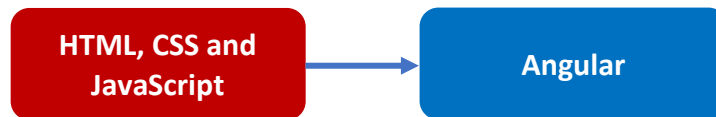|	
Prerequisite	Computer Fundamentals
Course Fee (Classroom or Online)	Rs. 2000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 200/-
Duration	12 Hours

Major Topics

- ❒ Introduction to Database
- ❒ Database Management System
- ❒ Introduction to SQL
- ❒ SQLite3
- ❒ SQL - Creating Tables
- ❒ SQL - Retrieving Data
- ❒ SQL - Manipulating Data
- ❒ Functions
- ❒ Grouping & Having
- ❒ Joining Tables
- ❒ Sub Queries
- ❒ Complex Queries
- ❒ Views
- ❒ Index

Angular

This course teaches how to build interactive single page applications (SPA) using Angular. It covers how to build front-end of a web application that can communicate with any back-end.

Learning Path

```
HTML, CSS and          →          Angular
JavaScript
```

Prerequisite	Knowledge of Web Applications
Course Fee (Classroom or Online)	Rs. 3000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 200/-
Duration	15 Hours

Major Topics

- ❏ **Overview and installation of Node.js, NPM, TypeScript and Angular CLI**
- ❏ **TypeScript Language**
- ❏ **Building Blocks of Angular Application – Modules and Components**
- ❏ **Working with data binding**
- ❏ **Working with built-in directives (Attribute and Structural)**
- ❏ **Using pipes and creating custom pipes**
- ❏ **Creating and using Services and dependency injection**
- ❏ **Working with inter-component communication**
- ❏ **Using Template Forms and Input Validation**
- ❏ **Building Reactive Forms and custom validators**
- ❏ **Making Ajax calls using HttpModule**
- ❏ **Using Mock API – JSON Server**
- ❏ **Implementing Routing and Navigation**
- ❏ **Deployment of Angular Application**

Oracle Database

This course covers concepts of DBMS, SQL and PL/SQL. This is a must-to-do course for any programmer using database as back-end.

Prerequisite	Computer Fundamentals **Programming knowledge is a plus**
Course Fee (Classroom or Online)	**Rs. 4500/- (Includes digital course material)**
Digital or Physical Certificate Fee	**Rs. 200/-**
Duration	**30 Hours**

Major Topics

- ❏ **Introduction to DBMS and Oracle Database**
- ❏ **SELECT command**
- ❏ **Manipulating data using DML commands**
- ❏ **Number Functions, Date Functions and String Functions**
- ❏ **Conversion Functions and Miscellaneous Functions**
- ❏ **Creating and Altering Tables**
- ❏ **Grouping Data and Joining Tables**
- ❏ **Subqueries and Correlated Subqueries**
- ❏ **Views, Indexes and Sequences**
- ❏ **Security – Granting and Revoking Privileges**
- ❏ **Regular Expressions and Flashback Queries**
- ❏ **Introduction to PL/SQL**
- ❏ **Control Structures in PL/SQL**
- ❏ **Looping Structures**
- ❏ **Exception Handling**
- ❏ **Cursor Handling**
- ❏ **Stored Procedures, Functions and Packages**
- ❏ **Database Triggers**
- ❏ **Collections and Dynamic SQL**

Django Framework

This course teaches how to build Web Applications and REST API using Django Framework and Python Language.

Learning Path

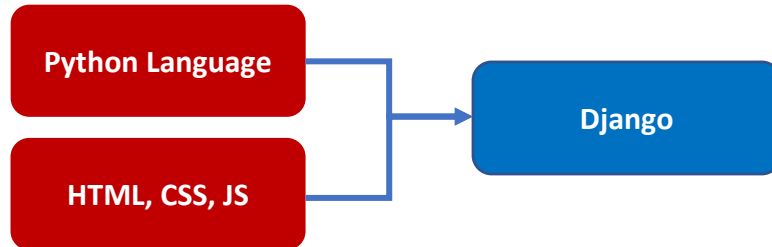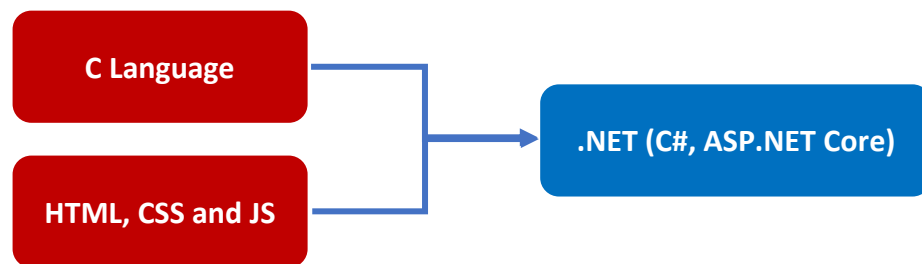| Prerequisite	Python Language + HTML
Course Fee (Classroom or Online)	Rs. 3000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 200/-
Duration	15 Hours

Major Topics

- ❏ Getting started with Django
- ❏ Understanding Views, Models and Templates
- ❏ Using Filters and Tags
- ❏ Working with Forms and Validation
- ❏ Making AJAX request using jQuery
- ❏ State management using Cookies and Sessions
- ❏ How to use ORM (Object Relational Mapping) to access Database
- ❏ Working with Class-based views and generic views
- ❏ Implementing Security
- ❏ Creating REST API using Django Rest Framework
- ❏ Using function views and class views to implement REST API
- ❏ Implementing Authentication in REST API
- ❏ Consuming Rest API

Microsoft.NET (C#, ASP.NET Core)

This course teaches how to develop web applications using C#, ASP.NET Core and Entity Framework Core of .NET, which is Free, Cross-platform and Open-source framework from Microsoft.

Learning Path

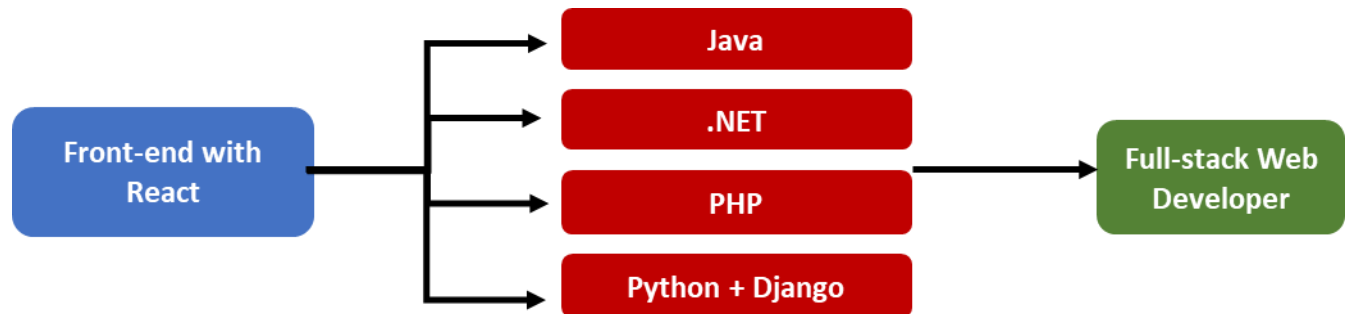|	
Prerequisite	☐ **Basics of 'C' Language** ☐ **Elementary knowledge of HTML, CSS and JS**
Course Fee (Classroom or Online)	Rs. 6000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 200/-
Duration	40 Hours

Major Topics

☐ **.NET Architecture**

☐ **C# Language**

☐ **.NET Class Library**

☐ **MS SQL Server**

☐ **Entity Framework Core**

☐ **ASP.NET Core**

☐ **Razor Engine**

☐ **ASP.NET Core MVC**

☐ **Web API**

Front-End with React

This course teaches all topics like HTML, CSS, Bootstrap, JavaScript, JSON, AJAX, jQuery and React that are related to Front-End Web Development.

At the end of this course, you will have acquired the skills to build Front-end of web application that can connect to Back-end (developed using any technology such as Java EE, ASP.NET, PHP, NodeJS and Django).

Learning Path

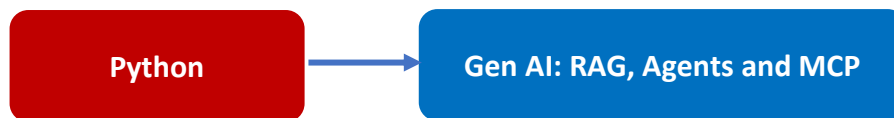| Prerequisite	Basics of Programming
Course Fee (Classroom or Online)	Rs. 5000/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 200/-
Duration	30 Hours

Major Topics

- ❑ HTML
- ❑ CSS
- ❑ Bootstrap
- ❑ JavaScript
- ❑ jQuery
- ❑ JSON
- ❑ AJAX
- ❑ Mock API
- ❑ React

Gen AI: RAG, Agents and MCP

This course covers how to use Generative AI with prompt engineering, how to build RAG (Retrieval Augmented Generation) applications, how to build AI Agents, how to use MCP (Model Context Protocol), and how to use AI pair programmer (like GitHub Copilot).

Learning Path

```
Python  →  Gen AI: RAG, Agents and MCP
```

Prerequisite	Basics of Python
Course Fee	Rs. 9500/- (Includes digital course material)
Digital or Physical Certificate Fee	Rs. 300/-
Duration	24 Hours

Major Topics

- ❐ Foundations of Generative AI
- ❐ Prompt Engineering
- ❐ Accessing LLMs using Python
- ❐ Retrieval Augmented Generation (RAG)
- ❐ AI Pair Programming
- ❐ Building AI Agents
- ❐ MCP (Model Context Protocol)
- ❐ Capstone Project