

# Syllabus - Diploma in Python Full Stack Development

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## Program Highlights

- Learn about tools and techniques used in the industry—Git, cloud hosting, coding standards, best practises followed by the industry.
- Faculty with industry experience
- Covers every aspect of application development-UI, Database, and Backend development.
- Learn by doing: Assignments for practising
- It covers every aspect of UI/UX development
- Step-by-step approach: Students develop a part of the project while learning each technology.

## Industry Project

At the end of the course, all the students will complete an e-commerce application hosted on a cloud server. Students will individually do an industry-standard project along with the course.

The following are the features of the e-commerce project:

- Administrators can manage the whole application, like approve or block resellers, remove customers if required, etc.
- Registration for customers and resellers.
- Login for customers and resellers
- Change password with OTP verification
- Update profile
- Resellers can add, modify, or delete products.
- Customers can search for products using different criteria-name of the product, category etc.
- A customer can buy and return the product.
- Resellers and admin will be able to pull different types of reports.

## Students will be able to work with companies that develop applications like:

- ERP application
- Accounting software
- Social media applications
- Hotel booking application
- Train, bus, flight booking application or ticket reservation
- job portals

- E-commerce
- Matrimony application
- Management System
- Hospital Information System
- College/School management system
- Doctor Booking
- Retail shop management
- Library Management System
- Internet banking
- Photo/Video sharing platforms
- Software for video conferencing
- Content management system
- And there are many more...
- Students can also opt for job roles in:
- Digital marketing, web development, game development, and so on.

## Designations

- Junior Software Engineer
- Software Engineer
- Full stack developer
- Web Developer
- Back end developer
- Junior Python developer
- UI/UX developer
- Front end developer

## Certification

Certification by Oray Education, London UK

## Course Overview

The goal of the CS diploma in Python full stack development is to transform you into a professional web application developer. Python is chosen over other languages because of its simple text and strong libraries, and our expert team trainers always focus on real-time and skill development sections.

You will receive real-time project experience with industry professionals along this course. We provide live-instructor-led training to help you in grasping Python and Angular programming concepts. You will be able to do an application for Ecommerce hosted in a cloud server. You'll come to understand coding logic using popular languages and frameworks like Python, JavaScript, Typescript, Angular and Django while learning how to think like a programmer by building software from the ground up. Your entry into your first Junior Web Developer career will be facilitated by our web development bootcamp, which will offer you mentorship, a data-driven curriculum, and an excellent learning environment.

## Programme Structure

### Sprint 1: Creating a website:

Designing websites using HTML: basic HTML tags and their usage; HTML tables, lists, and links, HTML forms.

Hosting a website: Using an FTP client to host a website.

### Sprint 2: Create your Django project

Setting up a virtual environment: installing a virtual environment, installing packages and the Django framework on a virtual environment

Introduction to Django: Creating projects in Django, Django configurations, adding templates, writing views, running Django projects, working with Django, REST API.

git-version control: creating github repositories, pushing and pulling, cloning.

Website deployment: CI and CD, configuring Django projects for deployment, Heroku cloud server, connecting Git and Heroku, Heroku Server Application hosting Django applications

Test-driven development(TDD): concept of TDD, writing TDD code for the project, executing test cases, linting

### Sprint 3: Create a website:

CSS: CSS box model, CSS selectors, CSS methods of application, pseudo selectors, different style properties, CSS grid layout, CSS website design

Bootstrap: Including Bootstrap, Bootstrap grid system, Designing HTML elements using Bootstrap, Bootstrap forms, Creating a Bootstrap model and a drop-down menu Creating web pages using Bootstrap

### Sprint 4: JavaScript: Make your web pages interactive with JavaScript:

Programming using JavaScript: data types, variables, arrays, loops, decision making, functions, DOM manipulation using JavaScript, Creating a calculator using JavaScript

JQuery: Introduction to JQuery, JQuery Selectors, JQuery Events and Effects, Applying JQuery to Web Pages

Jquery ajax: JSON parsing in Javascript

### Sprint 5: Design the Database:

DBMS and relational database models PostgreSQL, Keys, Applying DDL and DML commands, functions, joins and subqueries, Creating a database for a project

### Sprint 6: Python programming:

Basic programming: variables, data types: number, string, list, tuple, set, dictionary, comments, decision making, looping, functions, modules, exception handling.

Object-oriented programming in Python: abstraction, encapsulation, inheritance, and polymorphism.

JSON parsing in Python, logging in Python.

#### Sprint 7: Django:

Introduction to Django, MVT architecture, framework, django ORM, writing ORM queries-insert, select, update, delete, join etc., CRUD operations in Django, Get, post, session and cookies, REST API, TDD, CI/CD, OTP verification, Payment gateway integration

#### Sprint 8: Programming using Typescript

TypeScript: Using variables, data types, type assertion, arrow functions, object-oriented programming, getters and setters

Using a web browser for development: using a developer console, different types of browser storage, HTTP status codes.

#### Sprint 9: Introduction to Angular

Basics of Angular - NodeJS & Angular installation, using angular CLI commands, creating an angular project.

Hosting-Heroku cloud server, Connecting Git and Heroku, Heroku server application hosting an Angular application, enabling automatic deployment, CI/CD.

Angular directives: types of angular directives, \*ngIf, \*ngFor, \*ngSwitchCase.

#### Sprint 10: Angular fundamentals

Angular data & event binding: Data binding(one way&two way), Event binding, Interpolation, Property binding, Attribute binding, Class binding, Style binding, Template variable.

Angular decorators: class decorator, property decorator, method decorator, parameter decorator.

Angular routing: routes, router module, router outlet, named routes.

Reusable components, pipes, custom pipes, observables and promises, auth guard.

#### Sprint 11: Angular material

Angular materials, using CSS in Angular, material design bootstrap. Angular fx flex, SCSS/SAAS-Mixins, inheritance

#### Sprint 12: Angular forms

Template-driven forms, reactive forms, and form validation. Asynchronous validator, custom validator

#### Sprint 13: Communication between different components in an angular

Parent-child relationship-Input properties, output properties, @view child, content projection

Non-related components: event emitters, subject, behaviour subject, replay subject

#### Sprint 14: Angular Services & API

Service creation, API call (HTTP client module).