



Full-Stack Web Development (Django + React) with Capstone Project

Course Objectives

1. Understand full-stack web development using Django (backend) and React (frontend).
2. Learn to design and implement database models, views, templates, and REST APIs in Django.
3. Build interactive frontend interfaces using React and connect them to Django APIs.
4. Implement user authentication, sessions, and role-based access control.
5. Handle forms, file uploads, media, and dynamic content efficiently in Django.
6. Gain practical experience with Django admin, ORM queries, and class-based views.
7. Learn testing, debugging, and deployment techniques for production-ready web applications.
8. Develop a complete LMS platform with courses, lessons, assignments, and interactive features.
9. Build a fully functional e-commerce website with product catalog, shopping cart, checkout, and payment integration.
10. Enhance frontend UX/UI with responsive design, styling, and interactive features.
11. Deploy full-stack applications on live servers and follow best practices for maintainable code.
12. Prepare learners for real-world projects in web development, full-stack engineering, and e-commerce platforms.

Prerequisites

- Basic programming knowledge in Python and HTML/CSS.
- Familiarity with JavaScript and frontend frameworks is helpful but not mandatory.
- Understanding of databases and web application concepts.

Tools & Environment

- Python (Django), Node.js, and React development environment.
- VS Code or any preferred IDE.
- MySQL, PostgreSQL, or SQLite for database management.
- Postman for API testing.
- Git/GitHub for version control.
- Bootstrap or CSS frameworks for frontend styling.
- Optional: Deployment tools such as Gunicorn, Nginx, and hosting platforms.

Beyond Objectives Learning

- Gain hands-on experience by building a fully functional LMS and E-commerce platform.
- Learn to integrate backend APIs with dynamic frontend interfaces.
- Implement secure authentication, role management, and payment systems.
- Optimize web applications for performance, security, and scalability.

Sr.	Title	Topic	Objective
1	Introduction to Full-Stack LMS	Overview of Django REST Framework + React	Understand the course goals, LMS features, and tech stack.
2	Setting up Development Environment	Python, Django, Node.js, React	Configure environment for backend and frontend development.
3	Django Project & App Setup	Startproject, Startapp	Initialize Django project structure and apps.
4	Django Models & Database	Models, migrations, ORM	Learn to design database schema and manage data.
5	Django Views & URLs	Function-based views, URL routing	Handle backend logic and route requests.



Sr.	Title	Topic	Objective
6	Django REST Framework Basics	Serializers, ViewSets, API endpoints	Expose backend data via REST APIs.
7	User Authentication in Django	Signup, login, JWT tokens	Secure the LMS with authentication.
8	React Fundamentals	Components, JSX, Props, State	Build interactive frontend interfaces.
9	React Routing & API Integration	React Router, Axios	Connect frontend to backend APIs and enable navigation.
10	Implementing LMS Features	Courses, Lessons, Assignments	Create core LMS functionalities (course creation, lessons, assignments).
11	Django Templates & Static Files	HTML templates, CSS, JS	Render dynamic pages with proper styling.
12	Django Forms & Validation	Forms, ModelForms	Capture user input safely with validation.
13	Django Admin Panel	Admin customization	Manage site data through the built-in admin.
14	Django Queries & ORM	QuerySets, filters, aggregation	Efficiently retrieve and manipulate database data.
15	Class-Based Views	ListView, DetailView, CreateView	Implement cleaner, reusable view logic.
16	Django Middleware & Sessions	Middleware, sessions, messages	Handle requests and user sessions.
17	File Uploads & Media Handling	FileField, ImageField	Enable file and image upload in Django apps.
18	Testing in Django	Unit tests, TestCase	Ensure app stability with automated testing.
19	Django Deployment Basics	WSGI, Gunicorn, Nginx	Prepare Django projects for production deployment.
20	Debugging & Best Practices	Debug tools, project structure	Learn to debug efficiently and write maintainable code.
21	E-commerce Project Setup	Django project structure for store	Initialize an e-commerce project and apps.
22	Product Models & Catalog	Product, Category models	Design product database and manage catalog.
23	Shopping Cart & Checkout	Cart logic, orders	Implement add-to-cart, update, and checkout functionalities.
24	User Authentication & Profile	Signup, login, user profile	Enable users to manage their accounts and orders.
25	Payment Gateway Integration	Stripe/Razorpay integration	Allow secure payment processing for orders.
26	Frontend Styling & UX	Bootstrap, templates	Enhance visual appeal and usability of the store.
27	Deployment & Hosting	Live server deployment	Deploy the e-commerce site live for users.

Minimum Completion Criteria:

- Complete all modules and MCQs
- Attempt weekly marathons
- Submit at least 2 out of 5 projects in the final level
- Attend minimum 80% of lessons

Certificate Details

- Upon successful completion of the Internship, learners will receive a Government-Recognized Certificate from Vidyawan, a registered MSME enterprise (*Udyam Registration No: UDYAM-WB-14-0205610*).



One Month Internship Certificate



Weekly Marathon Participation Certificate

Performance-Based Badge System

- Gold Badge – For Top Performers (90%+ score, completed 4+ projects)
- Silver Badge – For consistent performance (70–89%)
- Copper/Participant Badge – For all learners who complete the program

Contact Information

For queries, registration, or collaboration, feel free to contact us:

Vidyawan – Internship & Skill Development Platform

(A Government-registered MSME – UDYAM-WB-14-0205610)

- Email: contact.vidyawan@gmail.com
- Website: www.vidyawan.in (Get in touch section)
- Location: West Bengal, India
- Follow us for updates and upcoming internships