Mastery in Web Design and Development (Php/Laravel)

Course Outline

Equip students with advanced skills in full-stack web development using PHP, Laravel frameworks. Through project-based learning, students will gain hands-on experience in building dynamic web applications, integrating APIs, managing databases, implementing authentication, and deploying applications, preparing them to become proficient developers capable of creating scalable and maintainable web solutions.

MONTH	MODULE	TOPIC
Month 1: Backend Development with PHP Laravel	**Module 1:** Advanced PHP with Laravel	- Advanced PHP Concepts - Introduction to Laravel MVC Structure - Routing, Controllers, and Views in Laravel - Eloquent ORM (Database Interaction) - Laravel Migrations and Seeders
	Module 2: Database Management with Laravel	- Database Relationships in Laravel (One-to-One, One-to-Many, Many-to-Many) - Query Builder and Raw SQL Queries - Validation and Data Sanitization - Laravel Database Transactions and Error Handling - Pagination and File Uploads in Laravel
Month 2: Laravel and API Integration	**Module 3:** Frontend Development with Laravel and Blade	- Laravel Blade Templating Engine - Blade Components and Slots - Conditional Rendering and Loops in Blade - Extending Layouts and Partials in Blade - Form Handling and CSRF Protection
	Module 4: API Development and Integration	- RESTful API Development in Laravel - Laravel API Resources and Transformers - Authentication with Laravel Passport - Integrating Laravel with External Services (Payment Gateways, Email Services)
Month 3: Deployment	**Module 5:** Version Control with Git and Deployment	- Advanced Git Commands and Workflows (Rebase, Merge Conflicts) - Git Branching Strategies (Git Flow, Feature Branches) - Integrating Git with GitHub for Team Collaboration - Deployment to Production Servers (using SSH, FTP, or Laravel Forge)

	Module 6: Web Hosting and Performance Optimization	• Web Hosting Providers and Server Setup • Laravel Configuration for Production Environment (Caching, Debugging, Security) • Performance Optimization Techniques in Laravel (Caching, Queues, and Optimizing Queries) • Deploying Laravel Applications

Key Features

- **Learning Approach:** Hands-on, project-based learning to reinforce concepts.

- **Deliverables:** Two completed projects demonstrating practical skills.

- **Tools and Resources:** Git/GitHub for version control, VS Code for development, browser DevTools for debugging, and hosting platforms like GitHub Pages.