KOENIG SOLUTIONS · COURSE OUTLINE

Laminas PHP: Doctrine ORM & RESTful APIs

Learn to build, secure and deploy Laminas PHP applications with MVC, database operations and RESTful APIs.

5 Days	60	15
DURATION	TOPICS	HANDS-ON ACTIVITIES

COURSE OVERVIEW

This course covers building applications with the Laminas framework, starting with installation, project structure and MVC architecture. It then addresses models, views, controllers and form handling, followed by database operations including CRUD, migrations, DAO and query building. Security topics cover data sanitisation, authentication, session management and role-based access control, alongside error logging and debugging. The course concludes with RESTful API development, including routing, JSON handling, testing with Postman and PHPUnit, performance optimisation, and deployment to Apache or Nginx.

WHO THIS COURSE IS FOR

- **PHP Developers**
- **Backend Developers**
- **API Developers**
- **Web Application Developers**
- **Software Engineers**

PREREQUISITES

- Strong Knowledge of CORE PHP and OOPS concept

LEARNING OBJECTIVES

- Explain the MVC architecture and structure of Laminas applications
- Configure a Laminas application including database connections
- Build models, views and controllers with form validation
- Implement CRUD operations and database migrations with Laminas Db
- Apply security measures such as CSRF protection and RBAC
- Implement user authentication and session management
- Develop RESTful controllers and API routes with JSON handling
- Deploy a Laminas application to a web server

COURSE SYLLABUS

60 Topics

DAY 1 Introduction to Laminas Framework and Basic Setup

TOPICS

3 Activities

- Overview of Laminas
- Features and benefits of Laminas
- Understanding MVC architecture in Laminas
- Installing PHP and Composer
- Installing Laminas via Composer
- Understanding the project structure
- Configuring the Laminas application
- Setting up database connections
- Understanding basic configurations
- Generating code with Laminas tools
- Creating a basic CRUD application
- Running and testing the application

DAY 2 Working with Models, Views, and Controllers

TOPICS

3 Activities

- Creating and using models
- Data mappers and table gateways
- Validating data with model rules
- Creating and using controllers
- Actions and their configurations
- Passing data to views
- Creating and using views
- Understanding layouts and view files
- Using helpers in views
- Creating and processing forms
- Form validation rules
- Displaying validation errors and handling user input

DAY 3 Database Operations and Advanced Topics

TOPICS

3 Activities

- Performing CRUD operations
- Query building and filtering data
- Handling relational data with Laminas Db
- Introduction to database migrations
- Creating and running migrations
- Managing database schema changes
- Understanding DAO in Laminas
- Performing database operations with DAO
- When to use Table Gateway vs. DAO
- Using query builder
- Lazy loading and eager loading
- Caching query results

DAY 4 Security, Authentication, and Authorization

TOPICS

3 Activities

- Data sanitization and validation
- Preventing SQL injection and XSS
- Using CSRF protection
- Creating a user authentication system
- Login and registration processes
- Managing user sessions
- Role-Based Access Control (RBAC)
- Configuring roles and permissions
- Implementing access control filters
- Configuring error logging
- Handling exceptions
- Debugging techniques and tools

DAY 5 RESTful API Development and Deployment

TOPICS

3 Activities

- Understanding REST architecture
- Creating RESTful controllers
- Handling JSON data
- Setting up API routes
- Implementing CRUD operations for API endpoints
- Testing APIs with Postman
- Writing unit tests with PHPUnit
- Performance optimization techniques
- Using Laminas' built-in caching mechanisms
- Preparing the application for deployment
- Deploying to a web server (Apache, Nginx)
- Best practices for Laminas development

HANDS-ON ACTIVITIES

Practise What You Learn

MODULE	ACTIVITY
Introduction to Laminas Framework and Basic Setup	**LAB 1: BASIC SETUP AND FIRST APPLICATION** ■ Set up the Laminas environment ■ Create a simple CRUD application ■ Configure and test the application
Working with Models, Views, and Controllers	**LAB 2: MODELS, VIEWS, AND CONTROLLERS** ■ Create models, views, and controllers for a sample application ■ Implement form handling and validation ■ Display data in views and process user input
Database Operations and Advanced Topics	**LAB 3: DATABASE OPERATIONS AND MIGRATIONS** ■ Perform CRUD operations using Laminas Db ■ Create and apply database migrations ■ Implement advanced queries and data access techniques

MODULE	ACTIVITY
Security, Authentication, and Authorization	**LAB 4: SECURITY AND AUTHENTICATION** ■ Implement user authentication and secure the application ■ Set up and configure RBAC ■ Test error handling and debugging practices
RESTful API Development and Deployment	**LAB 5: FINAL PROJECT** ■ Build a comprehensive RESTful API ■ Implement testing and optimization strategies ■ Deploy the application to a live server

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

Visit koenig-solutions.com | info@koenig-solutions.com