EDGE-RUET CSE Digital Skill Training Program
Training Track: PHP (Laravel)
Training Outline & Schedule
Intermediate
Batch No. RUETCSEB0103
Venue: Operating System (OS) Lab, 1st Floor, Department of CSE, RUET

Module Name	Content	Training Methodology	Duration	Date	Time	Trainer
Module 1: Introduction to Web Design	Overview of web design, importance in development, basics of HTML & HTML5, structure and syntax of web pages, essential tags and attributes.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	25.05.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 2: Interactive and Media Elements	Working with hyperlinks, embedding media, designing forms, creating user-friendly input fields.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	27.05.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 3: Advanced Styling and Layouts	Semantic HTML, CSS and CSS3 basics, styling properties, Box Model, Flexbox, and Grid layouts.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	29.05.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 4: Introduction to PHP Basics	Understanding the purpose and role of PHP in web development, syntax rules and commenting styles, variables and their scope, working with different data types, introduction to variable handling functions for data manipulation, creating dynamic and reusable code.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	03.06.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 5: Expanding PHP Basics	Defining and using constants and magic constants for better code consistency, exploring expressions and operators for building logic, mastering string manipulation functions to handle and process textual data effectively.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	05.06.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 6: Handling Input and File Management in PHP	Using super global variables for handling external inputs, understanding GET and POST methods for data transmission, learning essential file functions to manage file uploads, downloads, and processing data from files.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	26.11.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 7: PHP Control	Writing efficient code with control structures like if-else, switch, and loops, understanding arrays for data storage, working with associative and	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	28.11.2024	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert

Structures and Arrays	multidimensional arrays, mastering array functions for sorting, filtering, and data manipulation.				
Module 8: Comprehensive Object-Oriented Programming (OOP)	Introduction to OOP, classes and objects, properties and methods, access modifiers, magic methods, namespaces, Composer, hands-on mini-project.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	01.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 9: Database Fundamentals	Introduction to relational databases and their structure, understanding the importance of database normalization, designing efficient schemas, using SQL queries for basic operations like selecting, inserting, updating, and deleting data.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	03.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 10: CRUD Operations – Part 1	Creating records in the database using SQL and PHP, understanding form data submission, validating and sanitizing input for secure operations, designing user-friendly interfaces for data entry.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	05.12.2024	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 11: CRUD Operations – Part 2	Reading data from the database using queries, displaying data in tabular format, implementing update functionality with pre-filled forms, ensuring data integrity during updates.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	08.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 12: CRUD Operations – Part 3	Deleting records from the database securely, implementing soft delete functionality for recoverable deletions, understanding the lifecycle of data and its implications on business logic.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	10.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 13: Third-Party Libraries	Integrating third-party libraries to enhance functionality, generating PDF documents for reports and data sharing, working with Excel files for data import/export, setting up and sending emails programmatically using libraries.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	12.12.2024	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 14: Mid Term Evaluation	Quiz, Practical, Viva-Voce & Project Presentation	Quiz, Practical Exam, Viva	03 Hours	15.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 15: Pagination Techniques	Implementing basic and advanced pagination techniques, ensuring scalability for large datasets, customizing pagination styles and behavior for better user experience.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	17.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert

Module 16: Introduction to Laravel Framework	Overview of frameworks and their significance, understanding MVC architecture, introduction to Laravel's features and versions, setting up a Laravel environment using Composer and Laragon, running and testing a Laravel project.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	19.12.2024	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 17: Laravel Folder Structure and Artisan Commands	Exploring Laravel's folder structure and its components, understanding HTTP request flow in Laravel, using Artisan commands for automation, introduction to Packagist and Laravel packages, understanding the request lifecycle in Laravel.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	29.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 18: Routing and Blade Templating	Defining routes and managing their logic, understanding Blade templating for dynamic HTML generation, displaying and manipulating data within templates, extending templates for code reusability, integrating Laravel Collective for enhanced form handling.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	31.12.2024	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 19: Views in Laravel	Creating and managing views in Laravel, passing data from controllers to views, sharing data across multiple views, utilizing view composers for modular data sharing.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	02.01.2025	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 20: Database Management in Laravel	Understanding Laravel migrations for database structure management, using seeding for initial data population, creating test data using factories and Faker, exploring Tinker for interactive database operations.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	05.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 21: Controllers in Laravel	Defining controllers to manage application logic, working with namespaces and single-action controllers, creating resource routes and parameter naming, extending resource controllers for customized behavior.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	07.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 22: Database Relationships	Defining and implementing relationships in Laravel, exploring one-to-one, one-to-many, and many-to-many relationships, retrieving and displaying related data efficiently.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	09.01.2025	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 23: Query Builder and Helpers	Using Laravel's query builder for complex database queries, installing Laravel debugger for performance analysis, exploring helper functions for common tasks.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	12.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 24: Models, Providers, and Soft Deletes	Implementing soft deletes in models for data recovery, using pagination for data display, sharing data across views efficiently using view composers, binding models to routes for simplified data access.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	14.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert

Module 25: Image and File Management	Performing CRUD operations for files and images, managing images using the Intervention library, ensuring secure and efficient file handling.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	16.01.2025	10:00 AM – 01:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 26: Authentication and Middleware	Setting up authentication in Laravel, implementing HTTP Basic Authentication, defining and registering middleware for application security, grouping middleware for modularity.	Presentation, Lecture, Demonstration, Discussion, Interaction	03 Hours	19.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert
Module 27: Final Evaluation	Quiz, Practical, Viva-Voce & Project Presentation	Quiz, Practical Exam, Viva	03 Hours	21.01.2025	05:00 PM – 08:00 PM	MSH / NOS / MIT / FAR / Industry Expert

* At least 25% of the classes will be taken by Industry Experts (at least 7 classes).

Assigned Teachers
MSH: Md. Sozib Hossain
NOS: Md. Nasif Osman Khansur
MIT: Md. Mazharul Islam
FAR: Md. Farhan Shakib

Industry Experts:
Yet to be added

Evaluation Method
Class Attendance: 10%
Quiz and Assignment: 20%
Mid-term Assessment: 20%
Project: 25%
Final Evaluation: 25%

Lab Assistants / Attendants:
Sakib Nihal Arnab
K. M. Nurunnabi
Md. Asadul Islam

Thanks in advance,

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&
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