

PHP & Ruby on Rails: Beginner

Target Audience: Third Year Engineering Student

Duration: 4 Days × 2 Hours = 8 Hours

Mode: Classroom/Hybrid | Hands-on + Demos + Quizzes

Course Objectives

- Learn fundamentals of PHP and Ruby programming.
- Understand web development using PHP and Ruby on Rails.
- Handle forms, sessions, and database integration.
- Build and run a basic Rails application with MVC architecture.

Prerequisite

- Basic HTML, CSS, JavaScript knowledge
- Basic SQL understanding (recommended)
- Familiarity with client-server web concepts

Lab Setup

- XAMPP/WAMP/LAMP stack (PHP + MySQL + Apache)
- Visual Studio Code (VS Code) with python extension
- phpMyAdmin for DB access
- Ruby (latest stable)
- Rails framework
- SQLite / PostgreSQL / MySQL
- Chrome
- Git installed GitHub Account

Course Breakdown

Session 1: Introduction to PHP (45 mins)

- Introduction and History of PHP
- General syntactic characteristics
- Setting up PHP environment (XAMPP/WAMP)
- Writing your first PHP script
- Variable and Constants
- Output in PHP (echo, print)

Demo

- “Hello World” in PHP
- Print student details

Quiz (15 mins)

- Assignment: Create a **Student Info Page** using PHP variables.

Session 2: Control Flow, Arrays and Functions (45 mins)

- Primitives, operations, and expressions
- Simple control statements (if, else, switch)
- Working with arrays (indexed & associative)
- Defining and using functions

Demo

- Grade calculator

Quiz (15 mins)

- Assignment: Add a **Student Marks Calculator** (input marks → grade output).

Session 3: Form Handling and Session Management (45 mins)

- Handling HTML forms with PHP
- Handling forms with \$_GET & \$_POST
- Using cookies and sessions
- Introduction to session tracking

Demo

- Feedback form

Quiz (15 mins)

- Assignment: Add a **Student Registration Form** (name, email, marks) storing data in array.

Session 4: File Handling & PHP with Databases (45 mins)

- File upload/read/write
- Connecting PHP with MySQL and CRUD Operations
- Overview of WAP and WML

Demo

- Session-based login

Quiz (15 mins)

- Assignment: Store student registration data in **MySQL**

- Assignment: Add **login/logout with session**

Session 5: Introduction to Ruby (45 mins)

- Introduction and History
- Syntax basics, scalars
- Arrays & hashes
- Input/output

Demo

- Ruby array iteration

Quiz (15 mins)

- Assignment: Create Ruby script to **store student records in array & display results**.

Session 6: Control, Methods & Classes (45 mins)

- Conditionals (if, unless, case)
- Loops (while, until, each)
- Methods & classes
- Code blocks, iterators, and simple pattern matching

Demo

- Class for Student GPA

Quiz (15 mins)

- Assignment: Build **Student class with GPA calculation**.

Session 7: Introduction to Rails (45 mins)

- Overview of Ruby on Rails framework
- Understanding MVC architecture
- Document requests and processing forms
- Creating a very basic Rails app structure

Demo

- Generate Rails scaffold

Quiz (15)

- Assignment: Create **Rails Student Registration App** with form input.

Session 8: Rails Applications & Databases (45 mins)

- Connecting Rails apps to databases
- Handling layouts and basic views
- Using Rails with AJAX (as per syllabus)

Demo

- Student CRUD app with scaffold

Quiz (15)

- Assignment: Enhance app to:
 - Register student
 - Login/logout
 - Store & display feedback

Handbook

- **PDF Notes:** PHP, Ruby & Rails
- **Demo Code** on GitHub

Evaluation

- Assignments + GitHub Submission
- **MCQs** (20 PHP and 20 Ruby & Rails)