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| **COURSE OUTLINE** | | | |
| **Course Code & Title** | **INFT 352:**  **Advanced Web Engineering and Application With PHP** | **Credit Hours:**  **Three (3)** |
| **Instructor/Lecturer** | **Philip Sarfo-Manu** | **Email:** sarfomanu37@gmail.com |
| **Objectives** |  **Demonstrate proficiency in server-side scripting using PHP** Students will be able to write and organize PHP scripts to manage user interactions, process form inputs, and dynamically generate web content.   **Design and develop dynamic web applications integrated with SQL databases** Students will create database-enabled web applications by connecting PHP to MySQL using PDO, and applying SQL operations to manage data securely.   **Implement file handling and media management in web applications** Students will learn to upload, validate, and manage files (especially images) using PHP, and incorporate them into dynamic pages.   **Apply object-oriented programming (OOP) principles in PHP** Students will structure their web applications using classes and objects, promoting modularity and reusability in their code.   **Build and deploy practical, real-world web applications using open-source tools** Students will plan, develop, and present complete projects such as feedback forms, user authentication systems, and image galleries, applying best practices in web engineering. | |

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| **Week** | **Topic** | **Description** | **Assessment / Project** |
| 1 | Introduction to PHP and Web Environment | Overview of scripting languages, server/client-side scripting. Setting up development environment (XAMPP/WAMP), preparing and renaming files, PHP syntax basics. | Lab: Setup local web server and PHP environment. |
| 2 | PHP Basics: Output, Variables, Control Structures | Using PHP to print data, variables, arrays, conditionals, loops. Introduction to HTML/PHP integration. | Lab: PHP basic calculator or simple form output. |
| 3 | File Inclusion and Templates | Creating and including template files. Modular design with includes. Function basics. | Lab: Create a simple templated site using includes. |
| 4 | Project 1: Basic Form Handling Web App (Part 1 - Input & Validation) | Forms: Simple and reentrant form processing, form validation, persisting field data. | Project 1 Begins: Form-based user feedback collector with field validation. |
| 5 | File Uploading | Uploading files, handling file types and upload errors, storing file metadata. | Add file upload capability to Project 1 (e.g., photo upload). |
| 6 | Finalizing Project 1 | Configuration file, basic function library. Project integration and testing. | Project 1 Due: Feedback Form App with upload and validation. Presentation & Code Review. |
| 7 | Introduction to Databases & SQL | Database concepts, preparing databases in phpMyAdmin, users table, SQL clauses. | Lab: Create and populate users table with sample data. |
| 8 | PHP and Database with PDO | Connecting to MySQL using PDO, executing SQL, error handling. | Lab: Create a user registration form with PDO database storage. |
| 9 | Project 2: User Management System (Part 1 - Registration/Login) | Create a registration and login system using PDO, sessions, and password hashing. | Project 2 Begins: Secure user registration and login system. |
| 10 | File Handling & Image Storage | Handling images: storing image data in DB, file system operations, reading files, processing directories. | Add user profile image upload/display feature to Project 2. |
| 11 | Finalizing Project 2 | Finalize user profile, validation, and session management. Add logout functionality and error handling. | Project 2 Due: Complete user management system with image handling. Demo and peer review. |
| 12 | Project 3: Image Gallery Web Application | Full-scale dynamic PHP project: image gallery with paging, cookies for last-viewed page, random image display, using templates and object-oriented design. | Project 3 Begins: Students work in teams to design and begin building an image gallery system (continues as take-home if necessary). |

**Project Works**: There will be weekly project works, procedure or steps, algorithm and sample codes should be recorded in your Student Logbook.

**Group Work and Presentation**: Each student will be assigned to a group and each group will have a unique project to develop and submit before the semester ends.

**Attendance and Class contribution**: Student are required to attend lectures on regular bases and actively involve in all class /lecture activities.

**Mode of Delivery**

Lectures (face-to-face, online, using a student-centered learning approach), tutorials, seminars, group work, and extensive practical and assignments.

**Reading Material**

* Gosselin D., Kokoska D., & Easterbrooks R. (2011), PHP Programming with MySQL (2nd Edition), Cambridge, MA: Course Technology.
* Welling, L. & Thomson, L. (2017), PHP and MySQL Web Development  Pearson India
* Beighley, L. & Morrison, M. (2009), Headfirst PHP & MySQL. O'Reilly Media
* Nixon, R. (2014), Learning PHP, MySQL, and JavaScript: A Step, By, Step Guide to Creating Dynamic Websites (Animal Guide) (1st Edition), Sebastopol, CA: O’Reilly Media.
* Luke Welling, Laura Thomson (2016) PHP, and MySQL Web Development, 5th Edition, Addison-Wesley Professional, SBN-10: 0321833899 ISBN-13: 978-0321833891