Aksum University
Aksum Institute of Technology
Faculty of Computing Technology
Department of Computer Science

Course Title: Web Programming
Course Code: CoSc 3081

Credit Hrs.: 4   ECTS: 7   Lecture Hrs.: 4   Lab Hrs.: 3   Tutorial Hrs. 0

Prerequisite: None

Course Category: Compulsory

Year III   Semester I

Instructor's Information

Name: Zinabu H.   Email: zinabuscholar@gmail.com
                                                          zinabu@aku.edu.et
Office Location: B60, R201   Consultation Hours: TBA

Academic Year: 2023-2024

Course Description

Client-server Architecture: Web page Design and development; information Architecture & visualization; static & dynamic pages, client side programming using scripting languages (JavaScript), OOP programming using PHP, File manipulation and Management using PHP. Multimedia web programming, dynamic web content creation; session tracking; Internet protocols, PHP Web controls, connecting web page to data base, loading and manipulating XML documents, web security; cryptography theory.

Objectives

The objective of this module is to familiarize students:

- The concepts, principles and methods in programming for web and Internet environment and the services and technologies available and used on Internet. Specifically, at the completion of this module the student is able to

- Provide fundamental concepts and skills for the understanding and development of web- based applications.

- Construct Web sites using HTML and Server Side scripting Languages.

    Implement client-side interactivity

- Use CSS to manage Web site presentation and maintenance

- Select and customize existing technologies to set up and maintain web servers

- Specify, build and manage form and content of information-rich web sites

- Design, implement and evaluate client-server systems following specific protocol specifications, taking into account concurrency issue.

Course outline

Chapter 1: The World Wide Web (4hr)

    1.1. Course overview

    1.2. The Internet and World Wide Web

    1.3. Web Hosting and Domain Name Registration

Chapter 2: Hyper Text Markup Language (HTML) (10hr)

    2.1. Introduction to HTML

    2.2. HTML tags

        2.2.1. Basic HTML tags (HTML, HEAD, BODY,TITLE)

        2.2.2. Meta tag

        2.2.3. HTML Comments

        2.2.4. HTML Link

        2.2.4. HTML Text Formatting tags

        2.2.5. HTML image inserting tag

            2.2.5.1. IMG tag and its attribute

            2.2.5.2. Inserting Image Map

        2.2.6. HTML Table

        2.2.7. Ordered and Unordered List in HTML

        2.2.8. HTML Frames

            2.2.8.1. Frame Set

            2.2.8.2. Internal Frame

        2.2.9. HTML Form and Form Controls

        2.2.9. Inserting Multimedia in HTML

            2.2.9.1. Embed vs Video and Audio tags

        2.2.10. HTML Graphics

            2.2.10.1. HTML Canvas

            2.2.10.2. HTML SVG

Chapter 3: Cascading Style Sheet (CSS) (10hr)

    3.1. CSS Basics

        3.1.1. Introduction to CSS

        3.1.2. CSS Syntax (CSS Selectors and Declarations)

        3.1.3. Attaching CSS with HTML (External , Embedded and Inline)

    3.2. Style Sheet Rules

        3.2.1. Style Inheritance

        3.2.2. Style Rules Precedence

    3.3. Style Properties

        3.3.1. Foreground and Background Properties

        3.3.2. Font and Text Properties

        3.3.3. CSS Box Model

5.7. Loop Statements in PHP

5.8. Arrays in PHP

5.9. PHP Functions

5.10. Form Processing using PHP

5.11. PHP File Upload

5.12. PHP Cookies and Session

5.13. Database Programming using PHP

      5.13.1. Overview on MySQL database

      5.13.2. Creating Database Connection in PHP

      5.13.3. Sending Query to MySQL Database using PHP

      5.13.4. Processing Query Result.

5.14. PHP File Input-Output

5.15. PHP Date and Time

5.16. PHP Mathematical Functions

5.17. PHP OOP

Chapter 6: Advanced JavaScript and XML (AJAX) (4hr)

6.1. Introduction to AJAX

6.2. XMLHttpRequest Object

6.3. Sending Request to PHP server

6.4. Handling Response from Server

Chapter 7: Introduction to web development frameworks (4hr)
- a. Bootstrap & jQuery
- b. Node.js
- c. Angular.js
- d. React.js

Teaching - Learning methods

Three contact hours of lectures, three hours of lab and 1 hour of tutorials per week. Students do home assignments.

Assessment method (TBM)
Quizzes   20%
Assignments 10%
Project   20%
Final Exam   50%
Total   100%

Teaching materials

Reference books:

- Fundamental Concepts for Web Development: HTML5, CSS3, JavaScript and much more!, by Roxane Anquetil

- Web Design with HTML, CSS, JavaScript and jQuery Set 1st Edition by Jon Duckett (Author)

- W3Schools, https://www.w3schools.com