# ISLAMIC UNIVERSITY OF TECHNOLOGY

## Course Outline and Course Plan

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| **Name of the Teacher** | Md. Nazmul Haque | **Position** | Lecturer |
| **Department** | Computer Science and Engineering | **Programme** | B. Sc. in CSE |
| **Course Code** | CSE 4539/ CSE 4581 | **Course Title** | Web Programming |
| **Academic Year** | 2021-2022 | **Semester** | 5th |
| **Contact Hours** | 3.0 | **Credit Hours** | 3.0 |
| **Text books and Reference books (if any)** | 1. Learning Web Design: A Beginner's Guide to (X) HTML, Stylesheet, and Web Graphics<br>2. PHP and MySQL Web Development.<br>3. Learning JavaScript | **Authors of the books** | 1. Aaron Gustafson.<br>2. Laura Thomson.<br>3. Shelley Powers. |
| **Prerequisites (If any)** | | Curriculum Requirement | |
| **Course Homepage** | | | |
| **Teaching Methods/ Approaches** | ☑ **Lecture** | ☐ **Group discussion** | ☑ **Demonstration** ☑ **Problem solving** |
| | ☐ **Project** | ☐ **Others: Presentation by Students** | |
| **Teaching aids** | ☑ **Multi-media** | ☐ **OHP** | ☑ **Board and Marker** ☐ **Others** |

| **Course Assessment Method** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Attendance (10%)** | **Quiz 15% of Total Marks (Best 3 out of 4)** | | | | | | **Mid Semester (25%)** | **Semester Final (50%)** |
| **Evaluate based on the participation in the class** | **1st Quiz** | **2nd Quiz** | **3rd Quiz** | **4th Quiz** | **Others** | | **Week/Date** | **Week/Date** |
| | **Week/Date** | **Week/Date** | **Week/Date** | **Week/Date** | **Assignment** | **Homework** | | |
| | **3rd Week** | **6th Week** | **10th Week** | **13th Week** | **Will be given accordingly** | **Will be given accordingly** | **As per schedule of IUT** | **As per Schedule of IUT** |

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| **Course Contents and Objectives** | **Contents**<br>**Introduction**: The Internet model, Web browsers, Useful tools, Layers of the Internet World Wide Web, Domain Name Service, Uniform Resource Locator, Overview of Web Applications.<br>**Web programming using HTML and xHTML:** History of Markup Language, HTML Basics, Tags, Formatting Text, Creating Links, Adding Images, Lists, Tables, Frames, Forms, Cascading Style Sheets (CSS), Graphics. JavaScript: Introduction to java script, JavaScript syntax, Variables, Simple functions.<br>**PHP:** Generating HTML Dynamically, Processing Forms, Maintaining State in Web Applications, Cookies, Data Tier, Back-end Database Support, SQL Primer, Database Interface in PHP, Searching in Web Applications, Regular Expressions and Matching, Multimedia and Interactivity, Audio on the Web, Video on the Web<br>**Advanced tools:** AJAX, Flash, Flex.<br>**Objectives**<br>• **Demonstrate understanding of (X)HTML5 and CSS programming**<br>• **Create and compile advanced dynamic web projects using client - JQuery (Javascript) and server – PHP technology.**<br>• **Use a MySQL database with PHP to create database applications** |

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| | • **Show understanding of the logic behind advanced web applications.**<br>• **Write HTML pages and use basic JavaScript code to enhance the pages.**<br>• **Demonstrate an understanding of Content Management Systems.**<br>• **Plan, develop, debug, and implement interactive client-side and server-side web applications.** |
| **Course Outcomes** | **Course Outcomes (COs)**<br><br>**CO1 – Discuss** the basic principle on web development, the structural design of web pages using HTML, approaches in designing webpages. Select and apply appropriate debugging and testing techniques to ensure the correctness of a program and compliance to given specifications, to solve a computing problem<br><br>**CO2 – Apply** an appropriate coding standard with proper documentation in order to come up with a readable, understandable and maintainable program code.<br><br>**CO3 – Design** and implement a dynamic website using various web development tools and observe the rules in developing a website in order to come up with an interactive, informative and user-friendly website. |

| **Weekly plan for course content** | | |
|---|---|---|
| **Weeks** | **Topics** | **Task/Reading** |
| **1** | Introduction to Web technologies, DNS, Web Protocols | |
| **2** | Introduction to HTML, Basic structure | |
| **3** | HTML elements, Paragraphs Links colours and Frames, Forms, Tables | |
| **4** | The webpage presentation using CSS: Inline, Embedded and External CSS, CSS rules and selectors, Style cascading and inheritance, Bootstrap | Quiz 1 – CO1 |
| **5** | Introduction to JavaScript, what is JavaScript, JavaScript basic concepts | |
| **6** | JavaScript Advanced concepts | |
| **7** | JavaScript Objects and their types | |
| **8** | JavaScript events: Different types of events and action listeners | Quiz 2 – CO1, CO2 |
| | MID Semester Examination | MID - CO1,CO2 |
| **9** | Introduction to PHP and MYSQL | |
| **10** | PHP and MySQL history, Introductions to PHP and MySQL, COOKIES and SESSIONS | |
| **11** | PHP basic Syntax, Variables, Operators, Decision statement, loops, Exception handling | Quiz 3 – CO2, CO3 |
| **12** | PHP Arrays, control structure and functions | |
| **13** | MySQL Database: Tables, Records, and fields; Creating database and tables | Quiz 4 – CO2,CO3 |
| **14** | Using PHP with MySQL: Connect PHP to MySQL, Perform Queries | |
| **15** | Review Class | |
| | Semester Final Examination | Final - CO1,CO2,CO3 |

## CO-PO Mapping with Bloom's Taxonomy

| Mapping with CO, PO and Bloom's Taxonomy | | | |
|---|---|---|---|
| **CO No.** | **Course Outcomes (CO) Statement** | **Levels of Bloom's Taxonomy** | **Matching with Program Outcome (PO)** |
| **CO1** | **Discuss** the basic principle on web development, the structural design of web pages using HTML, approaches in designing webpages. Select and apply appropriate debugging and testing techniques to ensure the correctness of a program and compliance to given specifications, to solve a computing problem | C3 | PO1 |
| **CO2** | **Apply** an appropriate coding standard with proper documentation in order to come up with a readable, understandable and maintainable program code | C4 | PO2 |
| **CO3** | **Design** and implement a dynamic website using various web development tools and observe the rules in developing a website in order to come up with an interactive, informative and user-friendly website. | C4 | PO2 |

**Program Outcomes (POs: PO1 ~ PO12)**

| PO No. | Program Outcomes (POs) |
|---|---|
| | **Students graduating from the Bachelor of Science in Computer Science and Engineering (B.Sc. in CSE) program, upon graduation students will have the ability to:** |
| PO1 | **Engineering knowledge:** Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization as specified in K1 to K4 respectively to the solution of complex engineering problems. |
| PO2 | **Problem analysis:** Identify, formulate, research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences. (K1 to K4) |
| PO3 | **Design/development of solutions**: Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. (K5) |
| PO4 | **Investigation:** Conduct investigations of complex problems using research-based knowledge (K8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions. |
| PO5 | **Modern tool usage:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the limitations. (K6) |
| PO6 | **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems. (K7) |
| PO7 | **Environment and sustainability:** Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts. (K7) |
| PO8 | **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. (K7) |
| PO9 | **Individual work and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. |
| PO10 | **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |
| PO11 | **Project management and finance:** Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments. |
| PO12 | **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. |

## Grading Policy

| Numeric Grade | Letter Grade | Grade Point |
|---|---|---|
| 80% and above | A+ | 4.00 |
| 75% to less than 80% | A | 3.75 |
| 70% to less than 75% | A- | 3.50 |
| 65% to less than 70% | B+ | 3.25 |
| 60% to less than 65% | B | 3.00 |
| 55% to less than 60% | B- | 2.75 |
| 50% to less than 55% | C+ | 2.50 |
| 45% to less than 50% | C | 2.25 |
| 40% to less than 45% | D | 2.00 |
| Less than 40% | F | 0.00 |

## Class Schedule

| Day | Section 1 | Section 2 |
|---|---|---|
| Thursday | 12:00 PM – 1:00 PM | 1:30 PM – 2:30 PM |
| Friday | 1:30 PM – 2:30 PM | 12:00 PM – 1:00 PM |

**Student's consulting hour: Wednesday at 3:00 PM**

**Instructor contact details:**
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