Future Academy
Higher Future Institute for Specialized Technological Studies

Course Specification

1- Course information:	
Course Code:	CSC315
Course Title:	Web Programming
Year/level	3rd
Academic Programs	Computer Science Program (B.Sc.)
Contact hours/ week	(Theoretical = 2hrs,Practical=2hrs), Total = 4hrs

2- Course aims:

This course aims to equip students with the foundational skills and knowledge required to design, develop, and deploy interactive and responsive websites. The course focuses on teaching the core technologies of the web: HTML for structuring content, CSS for styling and layout, and JavaScript for creating dynamic and user-friendly interfaces. Through hands-on projects and practical exercises, students will learn to build modern web pages, implement design principles, and integrate functionality to enhance user experience. By the end of the course, students will be able to develop fully functional websites and have a solid understanding of web development best practices.

3- Intended learning outcomes of the course (ILOs):

a- Knowledge and understanding:

On successful completion of this course, the student should be able to:

a1- Define the roles of HTML, CSS, and JavaScript in web development and their importance in creating interactive websites.

a2- Identify the structure and syntax of HTML elements, CSS rules, and JavaScript functions.

a3- Outline the steps for building a basic web page, from structuring content with HTML to styling with CSS and adding interactivity with JavaScript.

a4- List and **name** the key tags, attributes, and properties used in HTML and CSS, as well as common JavaScript methods and events.

a5- State the principles of responsive design and **recognize** how to implement them using CSS techniques like media queries and flexible layouts.

a6- Recognize the differences between inline, internal, and external CSS, and **state** their respective use cases.

a7- Determine appropriate JavaScript methods for manipulating the Document Object Model (DOM) to enhance user interactions.

a8- Memorize common HTML5 tags, CSS properties, and JavaScript functions frequently used in web development.

a9- Present the importance of accessibility standards and **identify** best practices for designing inclusive web pages.

a10- Match JavaScript events to their corresponding event listeners for creating interactive features on web pages.

b- Intellectual skills:

On completing this course, the student should be able to:

b1- Design and **develop** structured, visually appealing, and functional web pages using appropriate combinations of HTML, CSS, and JavaScript.

b2- Compare the effectiveness of different layout techniques, such as flexbox, grid, and traditional box models, and **explain** their advantages and limitations.

b3- Create interactive web features, such as form validations, dropdown menus, and sliders, by applying JavaScript logic and DOM manipulation.

b4- Interpret user requirements and **formulate** responsive designs to ensure compatibility across various devices and screen sizes.

b5- Review and **modify** existing web projects to enhance functionality, improve performance, and ensure adherence to modern web development standards.

c- Professional and practical skills:

At the end of this course, the student will be able to:

c1- **Apply** HTML, CSS, and JavaScript to **make** fully functional web pages and **utilize** frameworks or libraries for enhanced development efficiency.

c2- Illustrate web design concepts by **sketching** wireframes and prototypes to **prepare** for building structured and responsive web layouts.

c3- Examine and **analyze** website performance and accessibility to ensure compliance with web standards and user expectations.

c4- Summarize the outcomes of web development projects and **recommend** improvements to optimize usability, scalability, and performance.

c5. Assess and **compare** the use of different tools, such as CSS preprocessors (e.g., Sass) and JavaScript frameworks (e.g., React or Vue.js), for various project requirements.

d- General and transferable skills:

On successful completion of this course, the student should be able to:

d1- Communicate effectively within a development team, presenting design ideas and discussing project progress to ensure alignment with user requirements and project goals.

d2- Work in groups to collaboratively design and develop web projects, enhancing teamwork, time management, and problem-solving skills.

d3- Engage in life-long learning by exploring emerging web technologies, ethical considerations in web development, and community-driven best practices to stay current in the field.

4- **Course contents**

Week No.	Topics/units	Lecture hours	Practical hours	ILO's
1	Introduction to Web Programming	2	2	a1, a2, a3,a4,a5
2	Basics of HTML	2	2	a2, a3, a4, a5
3	HTML Forms and Tables	2	2	a6, a7, b1, b2
4	Quiz1 + Semantic HTML and Multimedia	2	2	a8, b2, c1, c2, c3
5	Advanced HTML and Best Practices	2	2	a10, a4, b1, b2, c2, d1
6	Introduction to CSS	2	2	a9, b1, b2, c3 , d1, d2
7	Midterm Exam	2	2	
8	CSS Selectors and the Box Model	2	2	a5, b1 , b2, c3, d1,b5
9	Layout and Positioning	2	2	a5, b1 ,b2, c3, d1, b5
10	Advanced Styling and Responsive Design	2	2	a6, b1 , b2, b3, c4, d1, d2
11	Quiz2 + JavaScript Fundamentals	2	2	a7, b4 , c5, d3
12	DOM Manipulation and Events	2	2	a7, b4 , c5, d3
13	Advanced JavaScript Concepts	2	2	a8, c6
14	Final Project and Review	2	2	b4 , c5, d1,d2

5- Teaching and learning methods

Methods	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	b1	b2	b3	b4	b5	c1	c2	c3	c4	c5	d1	d2	d3
Lectures	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Tutorial / Practical sections	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√
Self-learning				√			√					√					√		√				
Assays and reviews																							
Discussion groups		√						√						√			√		√		√	√	√
Brainstorming			√		√		√		√			√			√			√		√			
Blended-learning																							
E-learning	√	√	√	√																	√	√	√

6- **Teaching and learning methods for Low-achieving students**

- Additional teaching office hours are available for those who need help.

- More assignments to assess their ability to understand the course.

- Encourage teamwork among those students and other advanced ones to increase their participation and understanding.

Student assessment -7

Assessment method	Time	Grade weight (%)	Week	ILOs
Course Work (Tutorial Exercise and Assignments)	Through the semester	10	Every Week	a3: a9, b2, b3, b4, c1, c2, c3, c4, d1
Quiz 1	Through the lecture	5	Week#4	a1, a2,c1,c3,c4
Mid-term exam	1 hours	10	Week#7	a1- a6, c1, c2, c3
Quiz 2	Through the lecture	5	Week#11	a3, a4 a5, a6, b3, c4
Practical Exam	1 hour	10	Week#13	a3 - a7, b2, b3, b4, c1, c2, c3, c4, d1
Final Written exam	2 hours	60	Week# 15-16	a1- a7, b2, b3, c1- c3

8-List of references

8.1. Student notebooks:

- Comprehensive instructor notes ("PowerPoint slides") are available on the course web page ("Google Classroom")

8.2. Essential textbooks:

- **Zeldman, J., & Marcotte, E. (2022).** *Designing with Web Standards* (4th ed.). New Riders.

8.3. Recommended textbooks:

- **Wells, D. (2023).** *Modern Web Development: Understanding HTML, CSS, and JavaScript* (1st ed.). Apress.

8.4. Journals, Periodical and Reports ……..etc.

8.5. Websites

- **URL:** https://developer.mozilla.org/
- **URL:** https://www.w3schools.com/
- **URL:** https://css-tricks.com/
- **URL:** https://www.smashingmagazine.com/
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