

CSE 0613124: Web Application Design

Part A: Course Information

1. **Program:** BSc. in CSE
2. **Course Code:** CSE 0613124
3. **Course Title:** Web Application Design Lab
4. **Course Type (GED/Core Course/Electives):** Core Course
5. **Year/Level/Semester/Term:** 3rd year/ 1st Semester
6. **Academic Session:** Spring 2026
7. **Section:** 2A1
8. **Prerequisite Course (If any):** N/A
9. **Credit Value:** 1.5
10. **Contact Hours:** 3.00 hours/Week
11. **Class Schedule:** Sunday (Room: 411, Period: 11.00 AM – 02.00 pM)
12. **Counseling Schedule:** Monday (01.00 PM – 03.00 PM),
Tuesday (02.00 PM – 03.00 PM)
13. **Course Teacher:** Fatema Tuj Tarannom Esty, Designation: Lecturer, Room: 418(10), Email: fatema.tarannom@uits.edu.bd, Cell: +8801836020202, Specialization: Machine Learning, Deep Learning, Database Management System, Distributed database Cybersecurity, Bioinformatics, Health AI and Web Development.
14. **Rationale of the Course:** This course introduces students to the fundamental principles and techniques of web application design. It covers environment setup, idea sharing, and different design methodologies. Students will learn the basics of HTML, including images, lists, links, text formatting, tables, and forms, and develop skills in CSS for layout, styling, margin, padding, hover effects, and font combinations. The course also introduces the Bootstrap framework for responsive web design and JavaScript concepts such as event listeners and DOM manipulation for dynamic front-end development. Students engage in project proposal preparation, hands-on lab exercises, quizzes, and a final project showcase to develop practical skills and apply learned concepts in real-world scenarios.
15. **Course Objectives:**
 1. Apply HTML and CSS to create structured, styled web pages.
 2. Implement responsive designs with Bootstrap.
 3. Use JavaScript for dynamic and interactive front-end behavior.
 4. Develop, test, and present front-end projects.
 5. Collaborate and communicate design ideas effectively.

Part B: Skill Mapping

16. Course Outcome (COs)

No.	COs	BT	CP/W P	CA/EA	KP/WK	AT	DM&A
CO1	Understand the basic components and design methodologies of web application design.	L1, L2	-	-	WK1, WK3	LT, Q, LP	Lecture, Demonstration and Discussion
CO2	Apply HTML, CSS, and Bootstrap to create responsive and interactive web pages with proper layout, styling, and multimedia integration.	L2, L3, L4	-	-	WK3, WK4	LT, LF, Q, LP	Lecture, Demonstration and Discussion
					WK3,		Lecture,

CO3	Develop dynamic user interfaces using JavaScript and evaluate web pages for usability, accessibility, and performance.	L4, L5	WP1, WP3, WP5	-	WK5	LT, LF, Q, P, LP	Demonstration and Case Study
CO4	Evaluate existing systems and build new systems by applying state of the art technology.	L4, L5, L6	-	-	WK5, WK6	Q, P, CP	Lecture, Demonstration and Case Study

*COs- Course Outcome; BT- Bloom's Taxonomy; CP/WP- Complex Engineering Problems; EA/WA- Complex Engineering Activities; AT- Assessment Tools; KP/WK- Knowledge Profile; DM&A: Delivery Methods & Activities; LT- Lab Test, LF- Lab Final, Q- Quiz, R- Report, P-Presentation, V- Viva, A- Assignment, LP-Lab Performance.

17. Mapping of COs with Program Outcomes (POs)

Course Outcomes (CO)	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√										
CO3			√									

Part C: Teaching Learning Approach

18. Course plan specifying contents, COs, co-curricular activities (if any), teaching learning and assessment strategy mapped with COs.

*Commencement of the semester (Autumn 2025): 13 July 2025 and Last class of the semester: 20 November 2025

Week	Topics	Suggested Activity and Teaching Strategy	Assessment Strategy	Corresponding COs
1	Introduction to Web Technologies: Web architecture, design techniques, environment setup (VS Code), folder structure, idea sharing.	Explore design techniques, set up VS Code, create folder structures; discuss initial project ideas.	Lab performance	CO1
2	HTML Fundamentals: Basic tags, headings, paragraphs, text formatting, links, lists, images.	Practice creating basic HTML pages; insert links, images, and lists; follow guided demos.	Lab performance, Lab test	CO1
3	HTML Page Structuring: Div/span, anchor navigation, semantic tags, multi-page structure, basic layout design.	Create multi-page layouts, use semantic tags, internal navigation; conduct pair activities.	Lab performance, Lab test	CO1
4	HTML Tables & Forms: Tables, form inputs, labels, buttons, placeholders, basic validation concepts.	Build tables and forms with labels, inputs, radios, checkboxes; attempt basic validation examples.	Lab performance, Lab test	CO1, CO2
5	CSS Fundamentals: Selectors, colors, borders, font styling, spacing (margin, padding), width/height.	Style HTML forms/text; apply CSS rules; work on font combinations and spacing exercises.	Lab performance, Lab test	CO2

6	Lab Test 1 and Project proposal	Attend the lab test and Prepare project proposal, sketch UI wireframes, select colors/fonts.	Presentation, Lab test	CO1, CO4
7	CSS Layout Techniques: Display types, box model, positioning, hover effects, class/id usage	Implement margin/padding, display properties, hover effects; complete guided layout tasks.	Lab performance, Lab test	CO2
8	Advanced CSS (Flexbox & Grid): Building modern layouts, card structures, sidebars, responsive sections.	Build responsive sections using Flexbox and Grid; hands-on tasks: layouts, cards, navbar prototype.	Lab performance, Assignment	CO2
9	Bootstrap Introduction: Grid system, containers, rows/columns, typography, buttons, colors.	Apply the Bootstrap grid system; create responsive layouts; use components like buttons, badges.	Lab Discussion, Lab performance	CO2
10	Bootstrap Components & Responsive Design: Navbar, carousel, cards, forms, modals, responsive utilities.	Build a complete responsive homepage section using Bootstrap components; practice debugging.	Lab performance, Lab test	CO2
11	JavaScript Basics: Variables, data types, operators, functions, events	Write basic JS scripts; use events like click/keyup; solve small exercises.	Lab performance, Lab test, Quiz	CO3
12	DOM Manipulation with JavaScript: Query selectors, updating content/styles, event listeners, simple animations.	Update HTML via JS; handle events; dynamic styles; interactive tasks like toggles and menus.	Lab performance, Lab test, Quiz	CO3
13	Interactive Web Elements: Form validation, dynamic UI behaviors, toggles, slides, error handling.	Create interactive forms; validate inputs; add dynamic messages; apply simple animations.	Lab performance	CO3
14	Lab Final and Quiz	Practice HTML/CSS/Bootstrap/JS tasks; solve debugging problems; sample lab final mock tasks.	Lab performance, Lab test	CO1, CO2, CO3
15	Final Project Presentation & Viva: UI evaluation (usability, responsiveness), functionality demonstration, documentation check.	Present the full front-end project; demonstrate functionality, responsiveness, interactivity.	Final project Presentation, Viva, Report	CO1, CO2, CO3, CO4

Part D: Assessment Approach

19. Assessment and Evaluation

Assessment components		Marks Distribution
Continuous Assessment (CIA)	Class Attendance (10) Class Performance (10)	20%
	Lab Performance (10) Lab Test 1 (10) Lab Final (20)	30%
	Quiz (20)	30%

(100%)	Lab Report (10)	
	Project Presentation (10)	20%
	Viva (10)	
Total Marks		100%

20. Assessment Pattern - Continuous Internal Evaluation (100 Marks)

*The percentage distribution of Bloom's categories in the assessment tools may vary by $\pm 5\%$.

Bloom's Category	Attendance & Class Participation (10)	Class Performance (10)	Lab Test-1 (10)	Lab Final (20)	Quiz (20)	Lab Report (10)	Project Presentation (10)	Viva (10)
Remember					3%			5%
Understand		5%			4%	5%		
Apply		5%	10%	10%	5%			
Analyze				10%	4%			
Evaluate					2%	5%	5%	5%
Create					2%		5%	

21. Grading system

Numerical Grade	Letter Grade	Grade Point
80% and above	A + (A plus)	4.00
75% to less than 80%	A (A regular)	3.75
70% to less than 75%	A – (A minus)	3.50
65% to less than 70%	B + (B plus)	3.25
60% to less than 65%	B (B regular)	3.00
55% to less than 60%	B – (B minus)	2.75
50% to less than 55%	C + (C plus)	2.50
45% to less than 50%	C (C regular)	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

Part E: References

22. Learning Materials

1) **Recommended Readings:** Lecture notes and Necessary documents (Uploaded in Google classroom).

2) **Supplementary Readings**

Text Book:

1. HTML and CSS: The Complete Reference Fifth edition by Thomas A. Powell.

2. HTML & CSS: Design and Build Websites by Jon Duckett

Others (Site):

1. HTML Tutorial, Retrieved from: <https://www.w3schools.com/html/>

2. CSS Tutorial, Retrieved from: <https://www.w3schools.com/css/>

3. Javascript Exercises, Practice, Solution, Retrieved from: <https://www.w3schools.com/js/>

3) **Others.....**(as applicable for the discipline/academic program): N/A

Part F: Additional Information

- 1) Program Outcome: <https://uits.edu.bd/department-of-computer-science-engineering/>
- 2) Outcome Based Curriculum: <https://uits.edu.bd/curriculum-of-cse/>
- 3) Course Catalog: <https://uits.edu.bd/course-catalog-of-computer-science-engineering/>
- 4) Faculty Information: <https://uits.edu.bd/faculty-members-of-cse/>
- 5) Assessments Rubrics:
- 6) Details of Bloom Taxonomy, Knowledge Profile, Complex Engineering Problems and Complex Engineering Activities:
- 7) Make-up Exam Procedure:
- 8) Attendance Policy:
- 9) Academic Calendar: <https://uits.edu.bd/academic-calendar/>
- 10) Academic Policies:
- 11) Proctorial Rules (Code of Conduct): <https://uits.edu.bd/wp-content/uploads/2024/01/Code-of-Conduct.pdf>