



BAKER COLLEGE
STUDENT LEARNING OUTCOMES

WEB2110A – Front-End Web Development
3 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

1. List key technology, frameworks, and terminology related to front-end web development.
 - a. Define key terminology used in front-end web development, such as HTML, CSS, JavaScript, and responsive design, and explain their roles in creating user interfaces.
 - b. Identify and describe popular front-end frameworks and libraries, including React, Angular, and Vue, highlighting their core features and use cases.
 - c. List and categorize essential tools and technologies in the front-end development workflow, such as code editors, version control systems, and browser developer tools.
2. Explain how the Document Object Model (DOM) represents an HTML document, allowing JavaScript interaction to make dynamic web pages.
 - a. Describe the structure and hierarchy of the Document Object Model (DOM), including its representation of HTML elements as a tree of nodes.
 - b. Explain how JavaScript can access and manipulate DOM elements using methods such as getElementById, querySelector, and createElement.
 - c. Demonstrate how to dynamically update web pages by modifying DOM properties, attributes, and styles using JavaScript.
3. Build JavaScript functions using variables, loops, and conditionals to manipulate DOM elements dynamically in response to user interactions.
 - a. Write JavaScript functions that utilize variables to store and retrieve data for manipulating DOM elements.
 - b. Demonstrate the use of loops and conditionals within JavaScript functions to dynamically update or create DOM elements based on specific criteria or user input.
 - c. Implement event listeners in JavaScript to detect user interactions and trigger functions that modify DOM elements in real time.
4. Develop interactive web pages that combine HTML, CSS, JavaScript, and appropriate frameworks to develop dynamic web pages that meet defined requirements.

- a. Design and structure web pages using HTML and CSS to create visually appealing layouts that adhere to defined project requirements.
 - b. Integrate JavaScript to implement dynamic functionality, such as form validation, interactive elements, and responsive user interfaces.
 - c. Utilize appropriate front-end frameworks or libraries, such as Bootstrap, to enhance development efficiency and ensure consistency across web pages.
5. Debug JavaScript code to identify and correct common errors using browser developer tools.
- a. Demonstrate the use of browser developer tools, such as the Console and Debugger, to identify syntax and runtime errors in JavaScript code.
 - b. Apply debugging techniques, including setting breakpoints and stepping through code, to isolate and analyze problematic sections of JavaScript.
 - c. Interpret error messages and logs in the browser Console to diagnose issues and implement appropriate corrections in the code.

Big Ideas and Essential Questions

Big Ideas

- Foundational technologies of web development—HTML, CSS, JavaScript, and frameworks
- Manipulating the Document Object Model (DOM)
- Debugging techniques and tools

Essential Questions

1. What are the key technologies, frameworks, and tools involved in front-end web development, and how do they interact to create dynamic user interfaces?
2. How does the Document Object Model (DOM) structure an HTML document, and how can JavaScript manipulate the DOM to create dynamic and interactive web pages?
3. What programming constructs, such as variables, loops, and conditionals, are essential for building JavaScript functions that respond to user interactions and update DOM elements?
4. How can browser developer tools be effectively used to debug JavaScript code, identify errors, and optimize functionality for dynamic web pages?

These SLOs are approved for experiential credit.

Effective: Spring 2025