



Western Technical College

10152144 Web Programming

Course Outcome Summary

Course Information

Description	This is an entry level programming course with a strong emphasis on developing websites. No prior programming experience is required. The course introduces students to HTML, CSS, and JavaScript, and covers fundamental programming concepts.
Career Cluster	Information Technology
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	72

Textbooks

Web Design with HTML, CSS, JavaScript & JQuery (2 book set). Copyright 2014. Duckett, Jon. Publisher: John Wiley & Sons, Inc. **ISBN-13:** 978-1-118-90744-3. Required.

Learner Supplies

Fee for online subscription approximately \$60. **Vendor:** To be discussed in class. Required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Expand a Growth-Mindset
3. Cultivate Passion: Increase Self-Awareness
4. Live Responsibly: Develop Resilience
5. Live Responsibly: Embrace Sustainability
6. Live Responsibly: Foster Accountability
7. Refine Professionalism: Act Ethically
8. Refine Professionalism: Improve Critical Thinking

9. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Design software systems.
2. Develop software applications.
3. Integrate IT infrastructure.

Course Competencies

1. Explore the HTML language.

Assessment Strategies

- 1.1. Web Page

Criteria

You will know you are successful when:

- 1.1. you use HTML semantic elements in creating a web page.
- 1.2. you produce a web page containing a definition list, ordered list, unordered list, and nested list.
- 1.3. you produce a web page with headings, paragraphs, horizontal rules, and character entities.
- 1.4. you produce a web page with a background image.
- 1.5. you produce a web page with images correctly aligned within text, and within a table.
- 1.6. you produce a web page with internal and external links.
- 1.7. you produce a web page a table that includes headers.
- 1.8. you format tables with column and row spanning.
- 1.9. you use inline styles to control text alignment, text appearance, text color, page color, paragraph alignment, and image alignment.
- 1.10. you produce a web page that uses each of the standard form elements, including input, select, checkbox, radio buttons, and text areas.

Learning Objectives

- 1.a. Utilize block level and inline elements to create a web page
- 1.b. Incorporate images and other types of media into web pages
- 1.c. Use hyperlinks to relate pages within a website.
- 1.d. Use lists and tables within a web page
- 1.e. Explore basic HTML tags
- 1.f. Explore HTML structural, semantic, and metadata elements.

2. Explore the fundamentals of CSS.

Assessment Strategies

- 2.1. Web Page

Criteria

You will know you are successful when:

- 2.1. you produce a web page that uses all methods of incorporating CSS styles into it, including in-line, internal and external style sheets.
- 2.2. you produce a web page that uses tag, id, and class selectors
- 2.3. you produce a web page that demonstrates the CSS box model, including padding, margin, and borders
- 2.4. you produce a web page that demonstrate the use of 'floated' elements for building page layout
- 2.5. you produce a web page that demonstrates specificity of style rules
- 2.6. you produce a web page that uses media queries to adjust the layout based on the end user's screen size

Learning Objectives

- 2.a. Examine methods of incorporating CSS styles into an HTML document.
- 2.b. Examine CSS selectors
- 2.c. Explore CSS rules
- 2.d. Explore CSS properties

- 2.e. Examine specificity in CSS
- 2.f. Utilize media queries to create responsive layouts

3. Examine the JavaScript language.

Assessment Strategies

- 3.1. Web Page

Criteria

You will know you are successful when:

- 3.1. you produce a web page that demonstrates inline, internal, and embedded JavaScript
- 3.2. you produce a web page that makes use of various events, such as onload, onunload, onerror
- 3.3. you produce a web page that handles user events, including button clicks, keyboard presses, and form submissions
- 3.4. you produce a web page that uses JavaScript to dynamically add and alter content that is displayed
- 3.5. you produce a code sample that demonstrates the use of JSON to add content to a page
- 3.6. you explain the Document Object Model, including the following objects: document, event, location, history, navigator, window.
- 3.7. you produce a web page that demonstrates the use of a constructor function

Learning Objectives

- 3.a. Identify various methods of incorporating JavaScript code into an HTML document
- 3.b. Use event-driven features of JavaScript
- 3.c. Use JavaScript to enhance the navigation of a website
- 3.d. Use JavaScript to dynamically add content to a web page
- 3.e. Utilize AJAX to add content to a web page
- 3.f. Explore the Document Object Model

4. Explore various tools used in web development.

Assessment Strategies

- 4.1. Demonstration

Criteria

You will know you are successful when:

- 4.1. you demonstrate using a validation tool for CSS and HTML code.
- 4.2. you use basic features of a browser-based developer tool
- 4.3. you use an IDE.
- 4.4. you set up a development platform.
- 4.5. you transfer files to a web server using an FTP tool.

Learning Objectives

- 4.a. Use browser-based web developer tools
- 4.b. Utilize HTML and CSS code validators
- 4.c. Explore version control systems
- 4.d. Explore integrated development environments
- 4.e. Use a development platform
- 4.f. Use an FTP client to transfer files to a web server

5. Investigate the web platform and architecture.

Assessment Strategies

- 5.1. Demonstration
- 5.2. Written Product

Criteria

You will know you are successful when:

- 5.1. you explain the role of a web server.
- 5.2. you describe various devices and browsers that may be used to view a website.
- 5.3. you explain the basics of the HTTP protocol, including requests, responses, and headers.
- 5.4. you explain the use of JSON and XML for data exchange.

Learning Objectives

- 5.a. Examine the role of web servers
- 5.b. Explore various web browsers and client devices
- 5.c. Express the basics of the HTTP protocol
- 5.d. Investigate data exchange formats
- 5.e. Utilize a web service

6. Explore user interface design.

Assessment Strategies

- 6.1. Written Product
- 6.2. Demonstration

Criteria

You will know you are successful when:

- 6.1. you describe considerations for designing the navigation of a web site.
- 6.2. you produce a website that uses the ALT attribute for all images.
- 6.3. you explain ease-of-use design considerations.

Learning Objectives

- 6.a. Explore various methods of designing website navigation
- 6.b. Differentiate approaches of designing for various devices
- 6.c. Investigate ease-of-use considerations

7. Produce a simple web site.

Assessment Strategies

- 7.1. Written Product

Criteria

You will know you are successful when:

- 7.1. you construct navigation for the website.
- 7.2. you construct a 'contact us' form that incorporates JavaScript validation of user input.
- 7.3. you use media queries to adapt the layout for mobile devices and desktop browsers.
- 7.4. you construct a header and footer for each page of the website.
- 7.5. you use a single CSS style sheet that is shared by all pages in the website.

Learning Objectives

- 7.a. Explain the purpose and content of a website
- 7.b. Create a navigation scheme for a website
- 7.c. Embed media into the pages of a website
- 7.d. Create a contact page that includes user input validation and confirmation of success

8. Explore fundamental concepts of programming.

Assessment Strategies

- 8.1. Web Page

Criteria

You will know you are successful when:

- 8.1. you produce a web page that uses variables of different data types.
- 8.2. you produce a web page that uses functions including parameters and return values.
- 8.3. you produce a web page that uses control structures.
- 8.4. you produce a web page that uses expressions that contain operators.
- 8.5. you produce a web page that uses indexed and associative arrays.

Learning Objectives

- 8.a. Explore variables and their associated data types.
- 8.b. Explore functions, parameters, and return values
- 8.c. Explore control structures
- 8.d. Explore operators and expressions
- 8.e. Explore indexed and associative arrays