



Western Technical College

10152144 Web Programming

Course Outcome Summary

Course Information

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| 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