

# Web Development 2

Exam Information	Description												
<b>Exam number</b> <b>894</b>  <b>Items</b> <b>42</b>  <b>Points</b> <b>49</b>  <b>Prerequisites</b> <b>Web Development 1</b>  <b>Recommended course length</b> <b>One semester</b>  <b>National Career Cluster Information Technology</b>  <b>Performance standards Included (Optional)</b>  <b>Certificate available</b> <b>Yes</b>	<p>The Web Development 2 industry certification exam assesses learners on their understanding of the Internet's fundamentals, including HTML5 coding, Cascading Style Sheets (CSS), and JavaScript. Learners are evaluated on their understanding of how to plan, design, develop, deploy, and maintain website projects, as well as their knowledge of using different scripting technologies to create dynamic and interactive websites.</p>												
	Exam Blueprint												
	<table> <tr> <th>Standard</th><th>Percentage of exam</th></tr> <tr> <td>1. Fundamentals of HTML5</td><td>20%</td></tr> <tr> <td>2. Cascading Style Sheets</td><td>35%</td></tr> <tr> <td>3. Site Planning and Design</td><td>16%</td></tr> <tr> <td>4. JavaScript Understanding</td><td>29%</td></tr> <tr> <td>5. Comprehensive Website</td><td>0%</td></tr> </table>	Standard	Percentage of exam	1. Fundamentals of HTML5	20%	2. Cascading Style Sheets	35%	3. Site Planning and Design	16%	4. JavaScript Understanding	29%	5. Comprehensive Website	0%
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## Standard 1

Fundamentals of HTML5: Students will create a multi-page website using good coding practice. (Such as those found in W3Schools.) (Suggested time proportion 20%)

### Objective 1 Use advanced HTML5 elements to create a website.

1. Add SVG images (i.e.: image map, icons, logos, etc.)
  1. You can use original images or use a library of SVG images.
2. Code HTML forms on websites (i.e.: radio, checkbox, text field, text area, field set, dropdown lists, legend, etc.)
3. Submit Button (Students need to code the button, but it will not submit without access to a server)
  1. GET - good for non-secure data & has a limited number of characters
  2. POST - secure and no size limitations
  3. Understand the action that will run on the server on the form submit button. (PHP file)
4. Code iframes or add the canvas element on a website
5. Incorporate JavaScript on a webpage
  1. In-line
  2. Internal
  3. External JS

### Standard 1 Performance Evaluation included below (Optional)

## Standard 2

Cascading Style Sheets (CSS): Students will style websites using CSS. (Suggested time proportion 35%)

### Objective 1 Understand the use of various CSS selectors.

1. Understand the cascade order for browser default, inline, internal, and external style sheet
2. Code element selections to modify HTML elements (tag, ID, & classes)
3. Code contextual selectors to modify nested elements (i.e.: footer nav {}, header ul {}, etc.)
4. Code pseudo class selectors (i.e.: a: link, a:visited, a:active a:hover)
5. Code pseudo element selectors Here are some examples:
  1. ::after{clear:both}
  2. p::first-line{color: #00FF00;}
  3. etc.

### Objective 2

1. Format page layout with advanced CSS.
2. Use grids, flexbox, or a combination for page layouts
3. Use width, height, or auto to adjust the size of the elements
4. Code navigation bars
5. Use text align, margin, and padding
6. Use float to position elements

### Objective 3

1. Build responsive websites
2. Media queries

3. SVG & picture elements
4. Responsive text size - using rem, vh, and vw in css
5. Responsive navigation bar
6. Introduce the concept of frameworks like: BootStrap, JQuery, Vue.js, Nodejs, etc.

**Objective 4** Code animation and graphics with advanced CSS.

1. Buttons. (i.e.: rounded, colored, etc.)
2. Image overlay hover. (i.e.: Fade-in, slide-out, etc.)
3. Image slider or carousel

## Standard 3

Site Planning and Design: Students will plan, design, implement, and maintain website(s). (Suggested time proportion 10%)

**Objective 1** Create a website plan and pitch for a client.

1. Identify basic principles of website usability, readability, and accessibility
2. Plan a website by using sketches, website hierarchy, wireframe, or a site map
3. Communicate with others (such as peers and clients) about design and content plans
4. Produce website designs that work on various devices and browser versions/configurations
5. Plan, communicate, or present a client's website before, during or after website development

**Objective 2** Create content for a website.

1. Create and prepare 2D images. .gif, .png, .jpg, .svg
2. Prepare rich media, such as, video, sound, or animation
3. Identify when to use various image and digital media file formats
4. Optimize images for web content, such as resize, resolution, compress, thumbnails
5. Understand the use of favicons
6. Identify how to avoid violating copyright rules
7. Demonstrate the use of semantic elements such as: audio, video, and figure

**Objective 3** Uploading and maintaining a site. Understand and be able to describe the capabilities of web servers.

1. FTP pages to a web server (\*Optional if security allows.)
2. Differentiate between types of IP addresses
3. Describe a static IP address
4. Describe a Dynamic IP address
5. Differentiate between ipv4 and ipv6
6. Conduct basic technical tests such as validating the website (W3C compliant), accessibility, SEO, etc.
7. Present webpages to others for quality assurances (QA) such as team members and clients for feedback and evaluation on technical merits and usability
8. Identify methods for collecting site feedback, such as using counters, feedback forums, Google Analytics, Google Webmaster Tools
9. Provide site maintenance using bug reports, backups, and promotion
10. Document all aspects of website maintenance
11. Identify internet protocols: http, https, ftp

**Objective 4** Work as a team to create a website.

1. Use good oral and written communication skills as a team member

**Standard 4**

JavaScript has become an essential web technology along with HTML and CSS, as most browsers implement JavaScript. Students will understand basic JavaScript in front-end and back-end development, mobile app development, desktop app development, and game development. (Suggested time proportion 30%)

**Objective 1** Intro to JavaScript

1. Introduce JavaScript and how it is used in web development
2. Include some simple JavaScript in your website.

**Objective 2** Functions in JavaScript

1. Introduce functions
2. Create custom functions – for example: `function myFunction() {alert("Hello World!");}`

**Objective 3** Variables in JavaScript

6. Introduce variables and uses – for example:  
`var name = prompt("Enter you name: ");`  
`alert("Your name is" + name);`

**Objective 4** Input in JavaScript. Learn how to gather input from the user. Store user input into a variable.

**Standard 5**

Comprehensive website. (Suggested time proportion 5%)

**Objective 1** Build an interactive response website.

**Objective 2** Participate in a CTSO or competition

**Workplace Skills**

- Communication
- Teamwork
- Critical and Creative Thinking
- Problem-Solving

- Dependability
- Legal requirements/expectations

### Overall Performance Skills

- Create and validate website HTML
- Create and validate website CSS

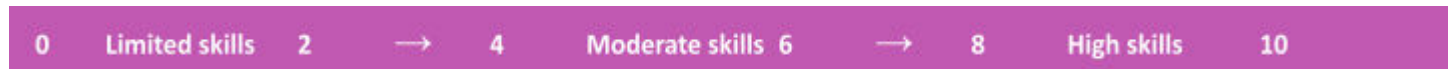
## Web Development 2

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of 8 or higher on the rating scale. Students may be encouraged to repeat the objectives until they average 8 or higher.

**Student's Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

## Performance standards rating scale



### Standard 1 – Fundamentals of HTML5

**Score:**

- Students will be able to code advanced HTML5 elements to create a website.

### Performance standard average score:

**Evaluator Name:** \_\_\_\_\_

**Evaluator Title:** \_\_\_\_\_

**Evaluator Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_