



# Web Development I

## **EXAM INFORMATION**

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**Exam Number**

893

**Items**

37

**Points**

49

**Prerequisites**

NONE

**Recommended Course Length**

ONE YEAR

**National Career Cluster**

INFORMATION TECHNOLOGY

**Performance Standards**

INCLUDED (OPTIONAL)

**Certificate Available**

YES

## **DESCRIPTION**

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Web Development is a course designed to guide students in a project-based environment in the development of up-to-date concepts and skills that are used in the development of today's websites. Students will learn the fundamentals of how the Internet works. They will learn and use the basic building blocks of the World Wide Web: HTML5 coding, Cascading Style Sheets (CSS), and JavaScript. Students follow the steps to create a website by planning, designing, developing, deploying, and maintaining of the website projects. Students will learn and use different scripting technologies to create more dynamic and interactive websites. They will learn what it takes for a career in Web Development as they complete projects and create their own web site(s).

## **EXAM BLUEPRINT**

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<b>STANDARD</b>	<b>PERCENTAGE OF EXAM</b>
1- Internet Standards and Fundamentals	2%
2- Fundamentals of HTML5	49%
3- Cascading Style Sheets (CSS)	33%
4- Site Planning and Design	8%
5- Images	4%
6- Exploration and Preparation for Careers in Web Development	4%



## STANDARD 1

STUDENTS WILL UNDERSTAND THE BASIC PRINCIPLES OF HOW THE INTERNET IS CONSTRUCTED, HOW IT FUNCTIONS, AND HOW IT IS USED

- Objective 1** Identify the infrastructure required to access the Internet.
1. Explain hardware and software used to connect to the Internet. (modem, browser, wifi, cabling, etc.)
  2. Explain the role of an Internet Service Provider (ISP).
- Objective 2** Identify Internet development and functions.
1. Understand how the Internet was developed.
  2. Understand the purpose web servers, routers, packets, IP Address, the “backbone”, Intranet, bandwidth, and firewalls.
  3. Acquire Internet vocabulary, including the basic Internet terms found in the vocabulary list on the USOE website under “Teacher Helps.”
- Objective 3** Identify the purpose of domains.
1. Explain the purpose of an IP address.
  2. Explain the purpose of a domain name and identify its parts (protocol, sub-domain, domain, top level domain, file path, file name).
- Objective 4** Identify the function of a Domain Name Server.
1. Explain the function of a Domain Name Server (DNS).
  2. Understand how to register a domain name.
- Objective 5** Define important Internet communications protocols and their roles in delivering basic Internet services.
1. Identify different Internet protocols. (http, https, ftp, and tcp/ip.)
  2. Describe how each protocol is used.
- Objective 6** Demonstrate knowledge of standard copyright rules.
1. Understand copyright for original creations.
  2. Understand the creative commons license.
  3. Understand when to obtain permission for non-original work.
- Objective 7** Identify the use and purpose of acceptable use policy (AUP).
1. Comply to the AUP for your school.
  2. Understand ethical behavior as described in the AUP. Intellectual Property, Netiquette, Respecting Privacy, Anti-Spamming Laws, etc.

Standard 1 Performance Evaluation included below (Optional)

## STANDARD 2

STUDENTS WILL DEMONSTRATE CREATION OF “WELL FORMED” WEB PAGES. TAGS AND REFERENCE LIST NEEDED TO BE AVAILABLE FOR TEACHERS.

- Objective 1** Demonstrate knowledge required to develop an HTML document.
1. Code the foundation for a webpage. Include the element tags html, head, title, and body.
  2. Structure the page using semantic elements such as: header, nav, main, section, article, aside, footer, etc.



- Objective 2** Explain appropriate file structure and naming.
1. Use logical file structure to build websites.
  2. Incorporate appropriate file naming for a website.
- Objective 3** Use the DOCTYPE Declaration.
1. Develop pages using the DOCTYPE declaration.
  2. Validate code according to the DOCTYPE used.
- Objective 4** Know, develop, and use the rules to create “well formed” web pages with appropriate HTML structure and standards that can be validated. (W3C)
1. Use lowercase for elements is consistency and best practice.
  2. Properly nest elements.
  3. Use quotes on attribute values.
- Objective 5** Demonstrate the use of elements and attributes.
1. Create pages with tags and attributes at the block and inline level. (h1, h2, h3, h4, h5, h6, p, hr, br, meta, style, etc.)
  2. Create web pages with text formatting, links, images, lists, tables, relative vs absolute connections, etc.
  3. Code special characters such as: &nbsp; &copy; &quot; &lt; &gt; &amp; &mdash;.
  4. Demonstrate the use of semantic elements such as: audio, video, track, mark, picture, figure, source, and canvas.
- Objective 6** Use meta tags for page documentation and search engine optimization (SEO).
1. Specify page description, keywords, viewport, and author using meta tags.
  2. Declare encoding using meta tags.
  3. Understand principles of search engine optimization.

Standard 2 Performance Evaluation included below (Optional)

## **STANDARD 3**

### **CASCADING STYLE SHEETS (CSS): STUDENTS WILL FORMAT WEB PAGES USING CSS**

- Objective 1** Apply essential syntax & parts of the CSS. (CSS box model).
1. Add a background attributes such as: color and image.
  2. Add font attributes such as: type, size, and color.
  3. Add border attributes such as: width, style, and color.
  4. Add style rule, declaration, selector, property value.
- Objective 2** Apply CSS to your website.
1. Apply CSS to an element using an inline style.
  2. Apply CSS to a webpage using an internal style.
  3. Apply CSS to a website using an external stylesheet.

Standard 3 Performance Evaluation included below (Optional)



## STANDARD 4

STUDENTS WILL PLAN, DESIGN, IMPLEMENT, AND MAINTAIN WEBSITE(S)

- Objective 1 Analyze Project requirements.
1. Identify the purpose and audience for a website.
  2. Demonstrate knowledge of website accessibility standards that address the needs of people with visual and motor impairments, such as using alt tags, strong instead of bold, etc.
  3. Identify and follow steps in the website planning and development process.
- Objective 2 Planning site design and page layout.
1. Demonstrate knowledge of best practices for designing a website; such as, maintaining consistency, separating content from design, using standard fonts, Google fonts, and colors.
  2. Demonstrate effective web development and design principles, including the use of color, white space, font styles, viewing patterns, background images, balance, etc.
  3. Identify basic principles of website usability, readability, and accessibility.
  4. Plan a website by using sketches, website hierarchy, or a site map.

Standard 4 Performance Evaluation included below (Optional)

## STANDARD 5

THE STUDENT WILL CREATE AND PREPARE IMAGES TO INTEGRATE WITH WEBSITE DESIGNS, USING IMAGE EDITING SOFTWARE

- Objective 1 Open, edit, and save an image for effective use on your website.
1. Crop and resize various images.
  2. Add a border and/or drop shadow to an image or text.
  3. Optimize an image (resize and change resolution for optimal load time).
  4. Enhance an image to improve photo quality (red eye, autocolour, etc.).
- Objective 2 Create buttons or navigation bar.
- Objective 3 Design a logo or banner to incorporate into a Web page.
- Objective 4 Optional: Use a digital camera to incorporate photos into a Web page.

Standard 5 Performance Evaluation included below (Optional)

## STANDARD 6

STUDENTS WILL EXPLORE CAREERS IN WEB DEVELOPMENT AND PREPARE A PORTFOLIO OF PROJECTS CREATED

- Objective 1 Explore IT Web Development careers.
1. Identify job roles in the Information Technology (IT) industry as they apply to web development.
  2. Understand the responsibilities, tasks, and skills each job requires.
- Objective 2 Create a Student portfolio.
1. Prepare an electronic portfolio of projects developed in the class.



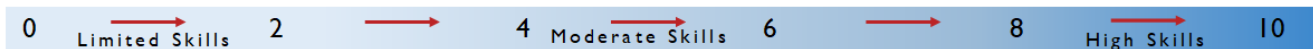
## Web Development I Performance Standards (Optional)

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**.

Students Name \_\_\_\_\_

Class \_\_\_\_\_

### PERFORMANCE RATING SCALE



### PERFORMANCE STANDARD I

Score:

- Create a four-page website with the following minimum elements:
  - Crop and resize various images.
  - Consistent look and feel throughout the website.
  - The same page heading, navigation bar, and footer on each page
  - Layout with HTML5 tags (header, footer, section, article, nav, aside.
  - Email link(s)
  - Table(s) with table data (not used for layout)
  - Background image(s) or Background color
  - Hyper-link(s)
  - Import graphics (jpeg/gif/png/svg)
  - Google Form
  - Page titles
  - Font changes (color, size, style)
  - Original CSS3 animation (optional)

### PERFORMANCE STANDARD AVERAGE SCORE:

Evaluator Name \_\_\_\_\_

Evaluator Title \_\_\_\_\_

Evaluator Signature \_\_\_\_\_

Date \_\_\_\_\_