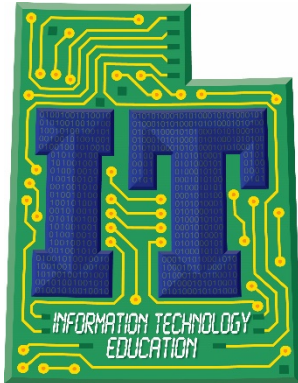


# STRANDS AND STANDARDS

## WEB DEVELOPMENT 1



### Course Description

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. They will follow the steps to create a website by planning, designing, developing, deploying, and maintaining of 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.

<b>Intended Grade Level</b>	9-12
Units of Credit	1.0
Core Code	35.02.00.00.060
Concurrent Enrollment Core Code	35.02.00.13.060
Prerequisite	None
Skill Certification Test Number	893, 934, 992, 993, 994, 9940
Test Weight	0.5 or 1.0
<b>License Type</b>	CTE and/or Secondary Education 6-12
<b>Required Endorsement(s)</b>	
Endorsement 1	Web Development, or
Endorsement 2	Computer Science Level 1, or
Endorsement 3	Computer Science Level 2

## STRAND 1

**Internet Standards & Fundamentals: Students will understand the basic principles of how the Internet is constructed, how it functions, and how it is used.**

### Standard 1

Identify the infrastructure required to access the Internet

- Explain hardware and software used to connect to the Internet. (modem, browser, wifi, cabling, etc.)
- Explain the role of an Internet Service Provider (ISP).

### Standard 2

Understand Internet development & functions.

- Understand how the internet was developed.
- Understand the purpose web servers, routers, packets, IP Address, the "backbone", Intranet, bandwidth, and firewalls.
- Acquire Internet vocabulary, including the basic Internet terms found in the vocabulary list on the USOE website under "Teacher Helps."

### Standard 3

Identify the purpose of domains.

- Explain the purpose of an IP address.
- Explain the purpose of a domain name and identify its parts. (protocol, sub-domain, domain, top level domain, file path, file name)

### Standard 4

Identify the function of a Domain Name Server.

- Explain the function of a Domain Name Server (DNS).
- Understand how to register a domain name.

## Standard 5

Define important Internet communications protocols and their roles in delivering basic Internet services.

- Identify different Internet protocols. (http, https, ftp, and tcp/ip.)
- Describe how each protocol is used.

## Standard 6

Demonstrate knowledge of standard copyright rules.

- Understand copyright for original creations.
- Understand the creative commons license.
- Understand when to obtain permission for non-original work.

## Standard 7

Understand the use and purpose of acceptable use policy (AUP).

- Understand the AUP for your school.
- Demonstrate ethical behavior as described in the AUP.

## STRAND 2

**Fundamentals of HTML5: Students will demonstrate creation of "well formed" web pages.**

**Tags and reference list needed to be available for teachers. (Suggested time proportion 40%)**

### Standard 1

Demonstrate knowledge required to develop an HTML document.

- Code the foundation for a webpage. (meta, title, style)
- Include the element tags html, head, title, and body.
- Explain the purpose of the doctype declaration.

### Standard 2

Explain appropriate file structure and naming.

- Use logical file structure to build websites.
- Incorporate appropriate file naming for a website.

### Standard 3

Understand and use the DOCTYPE Declaration (OTO) in the types of HTML

- Develop pages using the DOCTYPE declaration.
- Validate code according to the DOCTYPE used.

### Standard 4

Know, develop, and use the rules to create "well formed" web pages with appropriate HTML structure and standards that can be validated. (W3C)

- Use lowercase for elements.
- Properly nest elements.
- Use quotes on attribute values.

## Standard 5

Demonstrate the use of elements and attributes.

- Create pages with tags and attributes at the block and inline level. (h1, h2, h3, h4, h5, h6, p, hr, br, meta, style, etc.)
- Create web pages with text formatting, links, images, lists, tables, relative vs absolute connections, measurement, etc.
- Code special characters such as: &nbsp; &copy; &quot; &lt; &gt; &amp; &mdash;.
- Demonstrate the use of semantic elements such as: audio, video, track, mark, picture, figure, source, and canvas

## Standard 6

Use meta tags for page documentation and search engine optimization (SEO)

- Specify page description, keywords, and author using meta tags.
- Declare encoding using meta tags.
- Understand principles of search engine optimization.

## STRAND 3

**Cascading Style Sheets (CSS): Students will format web pages using CSS.** (Suggested time proportion 10%)

### Standard 1

Apply essential syntax & parts of the CSS. (CSS box model).

- Add a background attributes such as: color and image.
- Add font attributes such as: type, size, and color.
- Add border attributes such as: width, style, and color.
- Add style rule, declaration, selector, property value.

### Standard 2

Apply CSS to your website.

- Apply CSS to an element using an inline style.
- Apply CSS to a webpage using an internal style.
- Apply CSS to a website using an external stylesheet.

## STRAND 4

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

### Standard 1

Analyze Project requirements.

- Identify the purpose and audience for a website.
- 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.

- Identify and follow steps in the website planning and development process.

## Standard 2

Planning site design and page layout.

- Demonstrate knowledge of best practices for designing a website; such as, maintaining consistency, separating content from design, using standard fonts, Google fonts, and colors.
- Demonstrate effective web development and design principles, including the use of color, white space, font styles, viewing patterns, background images, balance, etc.
- Identify basic principles of website usability, readability, and accessibility.
- Plan a website by using sketches, website hierarchy, or a site map.

## STRAND 5

**The student will create and prepare images to integrate with website designs, using image editing software. (Suggested time proportion 15%)**

### Standard 1

Open, edit, and save an image for effective use on your website.

- Crop and resize various images.
- Add a border and/or drop shadow to an image or text.
- Optimize an image (resize and change resolution for optimal load time).
- Enhance an image to improve photo quality (red eye, autocolour, etc.).

### Standard 2

Create buttons or navigation bar.

### Standard 3

Design a logo or banner to incorporate into a webpage.

### Standard 4

Optional: Use a digital camera to incorporate photos into a web page.

## STRAND 6

**Exploration & Preparation for Careers in Web Development: Students will explore careers in Web Development and prepare a portfolio of projects created. (Suggested time proportion 5%)**

### Standard 1

Explore IT Web Development careers.

- Identify job roles in the Information Technology (IT) industry as they apply to web development.
- Understand the responsibilities, tasks, and skills each job requires.

## Standard 2

Create a Student portfolio.

- Prepare an electronic portfolio of projects developed in the class.

## Performance Skills

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)

## Skill Certificate Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10		
Web Development 1	893	12	28	16	6							62	43