Web Development I & II*

Career Cluster	Information Technology
Course Code	10201
Prerequisite(s)	Computer Applications Introduction to Information Technology (recommended) Computer Information Technology (recommended)
Credit	.5-1
Program of Study and Sequence	Web Development I & Web Development II is an option inside the Programming Pathway.
Student Organization	SkillsUSA, Future Business Leaders of America, CyberPatriots
Coordinating Work-Based Learning	Job Shadowing, Informational Interviews, Tours
Industry Certifications	None
Dual Credit or Dual Enrollment	TBD
Teacher Certification	Information Technology Cluster Endorsement; Web & Digital Communications Pathway Endorsement; Arts, AV Technology & Communications Cluster Endorsement; K-12 Educational Technology Endorsement; K-12 Classroom Technology Endorsement
Resources	

Course Description:

Web Development I is a course designed to guide students in a project-based environment implementing web development techniques. Through the use of hypertext markup language (HTML5) coding, Cascading Style Sheets (CSS), and JavaScript students will plan, design, develop, deploy, and maintain website projects. Students will learn fundamentals for a career in web development as they complete projects and create their own website. Web Development II reviews and builds on the concepts introduced in Web Development I including live production and scripting.

Program of Study Application: Web Development I & II is an option inside the Programming Pathway.

Note:

All Web Development standards integrate aspects of language arts and mathematics.

Course Standards

Indicator # WD 1 Identify basic principles of how the Internet is constructed, how it functions and how it is used.

Webb Level	*Sub-indicator*	*Integrated Content*
1	WD 1.1 Identify the infrastructure required to access the Internet. Examples: o Explain hardware and software used to connect to the Internet o Explain the role of an Internet Service Provider (ISP)	
1	WD 1.2 Summarize Internet development and functions Examples: o Discuss how the Internet was developed o Discuss the purpose of web servers, routers, packets, Internet protocol (IP) addresses, and firewalls	
1	WD 1.3 Recognize the purpose of domains Examples: o Explain the purpose and types of IP addresses: dynamic host configuration protocol (DHCP), static o Explain the purpose of a domain name	
2	WD 1.4 Define the function of a Domain Name Server (DNS) Examples: o Investigate DNS services o Discuss domain name registration	
1	WD 1.5 Define important Internet communications protocols and their roles in delivering basic Internet services Examples: o Explain the terms: hypertext transfer protocol (HTTP), hypertext transfer protocol secure (HTTPS), file transfer protocol (FTP), and transmission control protocol/Internet protocol (TCP/IP) o Describe how each protocol is used	

1	WD 1.6 Demonstrate knowledge of standard copyright rules. Examples: o Define copyright for original creations o Define the creative commons license o Identify when to obtain permission for non-original work	
2	WD 1.7 Explain the use and purpose of acceptable use policy (AUP) Examples: o Review the AUP of your school o Demonstrate ethical behavior as described in the AUP	

Notes:

Indicator # WD 2. Demonstrate creation of web pages.

Webb Level	*Sub-indicator*	*Integrated Content*
2	WD 2.1 Demonstrate knowledge required to create a web page Examples: ○ Code the foundation of a webpage ○ Include the element tags html, head, title, and body	
2	WD 2.2 Demonstrate appropriate file structure and naming Examples: ○ Use logical file structure to build websites ○ Incorporate appropriate file naming of a website	
2	WD 2.3 Create web pages with appropriate HTML structure and standards that can be validated using World Wide Web Consortium validator (W3C) Examples: ○ Use lowercase for elements ○ Properly nest elements ○ Use quotes on attribute values	
3	WD 2.4 Demonstrate the use of elements and attributes. ○ Create pages with tags and attributes at the block and inline level ○ Create web pages with text formatting, links, images, lists, tables, etc. ○ Implement special characters such as: non-breaking space ( ); copyright symbol (&copy); quotation mark (&quot); less than (&lt); greater than (&gt); ampersand (&amp); em dash (&mdash); ○ Demonstrate use of semantics such as: header, footer, section, article, nav, aside	

2	WD 2.5 Incorporate meta tags for page documentation and search engine optimization (SEO) Examples: ○ Specify page description, keywords, and author using meta tags ○ Declare encoding using meta tags ○ Discuss principles of search engine optimization	
4	* WD 2.6 Implement advanced elements to create web pages Examples: ○ Incorporate image maps on web page ○ Incorporate forms on a web page ○ Using a graphical user interface (GUI)-based HTML editing software to create web pages	

Notes:

Indicator # WD 3. Format web pages using Cascading Style Sheets (CSS).

Webb Level	*Sub-indicator*	*Integrated Content*
2	WD 3.1 Apply essential aspects of the CSS Examples: o Add background attributes such as: color and image o Add font attributes such as: type, size, and color o Add border attributes such as: width, style, and color	
2	WD 3.2 Apply CSS to a website Examples: o Apply CSS to an element using an inline style o Apply CSS to a webpage using an internal style o Apply CSS to a website using an external stylesheet	
3	WD 3.3 Use selectors in a CSS Examples: o Implement a type selector to modify an HTML element o Implement an id selector to modify a single element on the page o Implement class selectors to modify several class elements o Implement contextual selectors to modify nested elements	
4	* WD 3.4 Format page layout with advanced CSS Examples: o Use width, height, or auto to adjust the size o Use float to position elements o Use absolute and relative to position elements o Use text align, margin, and padding	Enhanced Critical Thinking & Problem Solving

Notes:

Indicator # WD 4. Plan, design, implement, and maintain website(s).

Webb Level	*Sub-indicator*	*Integrated Content*
2	WD 4.1 Analyze project requirements Examples: ○ 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 alt tags, strong instead of bold, etc. ○ Identify and follow steps in the website planning and development	Demonstrate Knowledge of 5.08 (Accessibility Requirements of the American Disabilities Act)
2	WD 4.2 Plan site design and page layout Examples: ○ Demonstrate knowledge of best practices for designing a website; such as maintaining consistency, separating content from design, using standard fonts, Google fonts, and web-safe 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 site map ○ Communicate with others about design and content plans ○ Produce website designs that work on various devices and browser versions/configurations ○ Plan, communicate, or present a website before, during or after website development	

4	* WD 4.3 Create content for website Examples: ○ Create and prepare two dimensional (2D) images ○ Create rich media such as video, sound and animation ○ Identify when to use various images and digital media file formats ○ Optimize images for web content, such as resize, compress, thumbnails ○ Insert navigation bars, rollover images, or buttons created in graphics editor	
4	* WD 4.4 Upload and maintain a site. Examples: ○ Upload pages to a web server ○ Conduct basic technical tests such as validating the website (w3c compliant), accessibility, search engine optimization (SEO), etc. ○ Identify methods for collecting site feedback, such as counters, feedback forums, Google Analytics, Google Webmaster Tools ○ Document all aspects of website maintenance	

Notes:

Indicator # WD 5. Explore advanced web concepts.*

Webb Level	*Sub-indicator*	*Integrated Content*
3	* WD 5.1 Demonstrate the use of scripting and other interactive tools Examples: o Add interactivity to your website using JavaScript & jQuery o Differentiate between client side and server side scripting languages	
2	* WD 5.2 Explore other web technologies Examples: o Identify when to use a database o Describe new and emerging Web technologies such as Web2.0, wikis, blogs, forums, etc. o Research the purpose of content management systems (CMS) such as Joomla, Wordpress, etc. o Explore concepts of responsive design	

Notes:

Indicator # WD 6. Explore careers in Web Development.

Webb Level	*Sub-indicator*	*Integrated Content*
2	WD 6.1 Explore Information Technology (IT) Web Development careers Examples: o Identify job roles in the IT industry as they apply to web development. o Understand the responsibilities, tasks, and skills each job requires	
2	WD 6.2 Demonstrate job skills for programming industries. Examples: o Attendance and punctuality o Positive attitude o Positive work ethic o Use of proper social skills o Display ability to work as part of team and take direction from others	

Notes: