

CompuScholar, Inc.
Alignment to Utah's **Web Development I** Standards

Course Title: KidCoder: Web Design Course ISBN: 978-0-9887070-3-0 Course Year: 2015
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Note: Citation(s) listed may represent a subset of the actual instances where objectives are met throughout the course.

Web Development I - Revised July, 2013

Levels: Grades 10-12
Units of Credit: 1.00
CIP Code: 11.0230
Core Code: 35-02-00-00-060
Prerequisite: Computer Technology
Skill Test: #893 Web Development 1A
 # 894 Web Development 1B
 Adobe Dreamweaver
 CIW Web Foundations Associate (1D0-610)
 CIW Site Development Associate (1D0-61B)

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 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.

CORE STANDARDS, OBJECTIVES AND INDICATORS

STANDARD 1	CITATION(S)
Internet Standards & Fundamentals: 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.	
a. Explain hardware and software used to connect to the Internet.	Chapter 15, Lesson 3 Chapter 15, Lesson 5
b. Explain the role of an Internet Service Provider (ISP)	Chapter 15, Lesson 2
Objective 2: Understand Internet development & functions.	
a. Understand how the Internet was developed	Chapter 1, Lesson 2 Chapter 15, Lesson 2
b. Understand the purpose web servers, routers, packets, IP Address, the “backbone”, and firewalls.	Chapter 15, Lesson 2 Chapter 15, Lesson 3 Chapter 15, Lesson 4
Objective 3: Understand the Purpose of domains	
a. Explain the purpose of an IP address.	Chapter 15, Lesson 3
b. Explain the purpose of a domain name.	Chapter 15, Lesson 2 Chapter 15, Lesson 3
Objective 4: Differentiate between types of IP addresses	
a. Describe a static IP address.	Chapter 15, Lesson 3
b. Describe a Dynamic IP address	Chapter 15, Lesson 3
c. Differentiate between ipv4 and ipv6.	Chapter 15, Lesson 3
Objective 5: Understand the function of a Domain Name Server.	
a. Explain the function of a Domain Name Server (DNS).	Chapter 15, Lesson 2 Chapter 15, Lesson 3
b. Understand how to register a domain name.	Supplemental Lesson 2
Objective 6: Define important Internet communications protocols and their roles in delivering basic Internet services. .	
a. Explain the terms, http, https, ftp, and tcp/ip.	Chapter 15, Lesson 2 Chapter 15, Lesson 5 Chapter 16, Lesson 2
b. Describe how each protocol is used	Chapter 15, Lesson 2 Chapter 15, Lesson 5 Chapter 16, Lesson 2
Objective 7: Demonstrate knowledge of standard copyright rules	
a. Understand copyright for original creations	Chapter 11, Lesson 1 Chapter 16, Lesson 1
b. Understand the creative commons license	Chapter 11, Lesson 1

c. Understand when to obtain permission for non-original work.	Chapter 11, Lesson 1
Objective 8: Understand the use and purpose of acceptable use policy (AUP).	
a. Understand the AUP for your school	Chapter 16, Lesson 1
b. Demonstrate ethical behavior as described in the AUP.	Chapter 16, Lesson 1

STANDARD 2	CITATION(S)
Fundamentals of HTML5: Students will demonstrate creation of “well formed” web pages	
Objective 1: Demonstrate knowledge required to create a web page.	
a. Code the foundation for a webpage.	Chapter 2, Lesson 4
b. Include the element tags html, head, title, and body.	Chapter 2, Lesson 4 Chapter 3, Lesson 1
Objective 2: Understand appropriate file structure and naming.	
a. Use logical file structure to build websites	Chapter 2, Lesson 1 Chapter 5, Lesson 2
b. Incorporate appropriate file naming for a website.	Chapter 1, Lesson 3
Objective 3: Understand and use the DOCTYPE Declaration (DTD) in the types of HTML.	
a. Understand older type pages that use the strict and transitional DOCTYPE	Chapter 2, Lesson 4
b. Validate code according to the DOCTYPE used.	Chapter 2, Lesson 4
Objective 4: Know and use the rules to create “well formed” web pages with appropriate HTML structure and standards that can be validated. (W3C)	
a. Use lowercase for elements.	Chapter 2, Lesson 3
b. Properly nest elements	Chapter 4, Lesson 2
c. Use quotes on attribute values.	Chapter 3, Lesson 1
Objective 5: Demonstrate the use of elements and attributes.	
a. Create pages with tags and attributes at the block and inline level.	Chapter 4, Lesson 1
b. Create web pages with text formatting, links, images, lists, tables, etc.	Chapter 3, Lesson 3; Chapter 5; Chapter 11; Chapter 4, Lesson 3; Chapter 12
c. Understand the use of special characters such as: © " < > & —	Chapter 4, Lesson 2
d. Demonstrate the use of semantic elements such as: header, footer, section, article, nav, aside.	Chapter 17, Lesson 2 Chapter 17, Lesson 3 Chapter 17, Lesson 4

Objective 6: Use meta tags for page documentation and search engine optimization (SEO).	
a. Specify page description, keywords, and author using meta tags.	Chapter 3, Lesson 1
b. Declare encoding using meta tags.	Chapter 3, Lesson 1
c. Understand principles of search engine optimization	Chapter 13, Lesson 4
* Objective 7: Use advanced elements to create web pages. (Semester 1B)	
a. Incorporate image maps on web page. (PUBLISHER'S NOTE: We demonstrate figure annotation instead of image maps).	Chapter 18, Lessons 2 and 3 (figure annotations)
b. Incorporate forms on web page.	n/a
c. Incorporate iframes on a web page.	n/a
d. Use a GUI-based HTML editing software to create web pages.	Chapter 16, Lesson 4 Chapter 16, Lesson 5

STANDARD 3	CITATION(S)
Cascading Style Sheets (CSS): Students will format web pages using CSS	
Objective 1: Apply essential aspects of the CSS.	
a. Add a background attributes such as: color and image.	Chapter 6, Lesson 1 Chapter 8, Lesson 2
b. Add font attributes such as: type, size, and color.	Chapter 6, Lesson 1 Chapter 7, Lesson 1
c. Add border attributes such as: width, style, and color.	Chapter 8, Lesson 3
Objective 2: Apply CSS to your website	
a. Apply CSS to an element using an inline style	Chapter 6, Lesson 1
b. Apply CSS to a webpage using an internal style.	Chapter 6, Lesson 3
c. Apply CSS to a website using an external stylesheet.	Chapter 6, Lesson 5
*Objective 3: Use selectors in a CSS (Semester 1B)	
a. Implement a type selector to modify an HTML element.	Chapter 6, Lesson 1
b. Implement an id selector to modify a single element on the page.	Chapter 7, Lesson 3
c. Implement a class selectors to modify several class elements.	Chapter 7, Lesson 3
d. Implement contextual selectors to modify elements within a container.	Chapters 22 and 23
* Objective 4: Format page layout with advanced CSS. (Semester 1B)	
a. Use width, height, to adjust the size.	Chapter 8, Lesson 2 Chapter 9, Lesson 1
b. Use float to position div elements.	Chapter 9, Lesson 4

c. Use absolute and relative to position elements.	Chapter 9, Lesson 1 Chapter 9, Lesson 2 Chapter 9, Lesson 3 Chapter 9, Lesson 4
d. Use text align, margin, and padding.	Chapter 10, Lesson 2 Chapter 7, Lesson 2

STANDARD 4	CITATION(S)
Site Planning and Design: Students will plan, design, implement, and maintain website(s).	
Objective 1: Analyze Project requirements	
a. Identify the purpose and audience for a website.	Chapter 10, Lesson 1 Chapter 13, Lesson 1 Chapter 13, Lesson 2
b. 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..	Chapter 3, Lesson 3 Chapter 13, Lesson 2
c. Identify and follow steps in the website planning and development.	Chapter 13, Lesson 1; Chapters 14 and 28; Supplemental Lesson 4
Objective 2: Planning site design and page layout	
a. 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.	Chapter 10, Lesson 1 Chapter 25, Lesson 4 Chapter 7, Lesson 1 Chapter 6, Lesson 2
b. Demonstrate effective web development and design principles, including the use of color, white space, font styles, viewing patterns, background images, balance, etc.	Chapter 8, Lesson 2 Chapter 10, Lesson 1
c. Identify basic principles of website usability, readability, and accessibility.	Chapter 10, Lesson 1 Chapter 6, Lesson 2 Chapter 13, Lesson 2
d. Plan a website by using sketches, website hierarchy, or a site map.	Chapter 13, Lesson 1
*e. Communicate with others (such as peers and clients) about design and content plans.	Chapters 14 and 28 (team projects where client is the teacher)
*f. Produce website designs that work on various devices and browser versions/configurations.	Chapter 20, Lesson 1
*g. Plan, communicate, or present a client's website before, during or after website development.	Chapters 14 and 28 (team projects where client is the teacher)

*Objective 3: Create content for website	
a. Create and prepare 2D images.	Chapter 11, Lesson 1 Chapter 11, Lesson 2
b. Prepare rich media; such as, video, sound, or animation.	Chapter 19; Chapter 27, Lesson 3
c. Identify when to use various image and digital media file formats.	Chapter 11, Lesson 1 Chapter 19, Lesson 1 Chapter 19, Lesson 3
d. Optimize images for web content, such as resize, compress, thumbnails.	Chapter 11, Lesson 1
e. Insert navigation bars, rollover images, or buttons created in graphics editor.	Chapter 24
f. Understand the use of favicons.	n/a
*Objective 4: Uploading and maintaining a site (Semester 1B)	
a. Understand and be able to describe the capabilities of web servers.	Chapter 15, Lesson 2 Supplemental Lesson 1
b. Upload pages to a web server.	Chapter 15, Lesson 5
c. Conduct basic technical tests such as validating the website (wc3 compliant), accessibility, SEO, etc.	n/a
d. Present web pages to others for quality assurances (QA) such as team members and clients for feedback and evaluation on technical merits and usability.	Chapter 14, Lesson 3 & Activity 3; Chapter 28
e. Identify methods for collecting site feedback, such as using counters, feedback forums, Google Analytics, Google Webmaster Tools.	Chapter 14, Lesson 3 & Activity 3 (using personal interviews and written rubrics)
f. Provide site maintenance using bug reports, backups, and promotion.	Chapter 2, Lesson 1 (backups only)
g. Document all aspects of website maintenance.	n/a

*STANDARD 5 (Semester 1B)	CITATION(S)
Advance Web Concepts: Students will explore advanced web concepts	
*Objective 1: Demonstrate the use scripting and other interactive tools. (Semester 1B)	
a. Add interactivity to your website using JavaScript.	Chapters 25, 26, 27
b. Understand the difference between client side and server side scripting languages.	Chapter 13, Lesson 3
c. (Optional) Explore new HTML5 elements, such as; canvas, drag and drop, audio, video, geolocation.	Chapter 19 (audio and video only)
*Objective 2: Understand other web technologies. (Semester 1B)	
a. Understand when to use a database.	n/a

b. Describe new and emerging Web technologies such as Web 2.0, wikis, blogs, forums, etc. (PUBLISHER'S NOTE: The examples listed in the objective are no longer emerging, but have been well-established for a decade. We study HTML5 as a modern, emerging technology.)	Chapter 16, Lesson 3 (HTML5)
c. Understand the purpose of content management systems (CMS) such as Joomla, Wordpress, etc.	n/a

STANDARD 6	CITATION(S)
Exploration & Preparation for Careers in Web Development: Students will explore careers in Web Development and prepare a portfolio of projects created.	
Objective 1: Explore IT Web Development careers	
a. Identify job roles in the Information Technology (IT) industry as they apply to web development.	Supplemental Lesson 8
b. Understand the responsibilities, tasks, and skills each job requires.	Supplemental Lesson 8
Objective 2: Create a Student portfolio	
a. Prepare an electronic portfolio of projects developed in the class.	Chapters 14 and 28 (student projects)