CompuScholar, Inc.

Alignment to Alabama Standards
Web Development

Alabama Course Details:

Course Title:	Web Development
Career Cluster(s):	Business Management and Administration
Course Credit:	1
Grade Levels:	9 - 12

CompuScholar Course Details:

Course Title:	Web Design
Course ISBN:	978-0-9887070-3-0
Course Year:	2021

Note 1: Citation(s) listed may represent a subset of the instances where objectives are met throughout the course.

Note 2: Citation(s) for a "Lesson" refer to the "Lesson Text" elements and associated "Activities" within the course, unless otherwise noted. The "Instructional Video" components are supplements designed to introduce or re-enforce the main lesson concepts, and the Lesson Text contains full details.

Note 3: Citation(s) to "Supplemental" or "Suppl." chapters refer to Supplemental Chapters found at the end of the main sequence of numbered chapters within the course.

Alabama Course Description

Web Development covers web design, web publishing, web programming, and database management. Web development includes many types of web content creation, such as hand coding web pages in a text editor, building a website in a program, and updating a blog via a blogging website.

Alabama Course Standards

Foundational Standards	CITATION(S)
1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.	N/A (See **Digital Savvy**, Chapter 24, Lesson 3)
2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.	Chapters 14 Suppl. Lessons 4, 8
3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.	Suppl. Lesson / Activity 8
4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.	Chapter 11, Lesson 1 Chapter 16, Lessons 1, 2, 4

5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.	Suppl. Lesson 13
6. Discuss and demonstrate ways to value diversity.	Suppl. Lesson 8

Hardware, Software and Connectivity Technologies	CITATION(S)
1. Identify networking components and explain their impact on web development.	Chapter 15, Lessons 2, 3, 4
2. Compare and contrast various input, processing, output, and storage devices and storage services.	Chapter 15, Lessons 1, 5
3. Compare a range of current and emerging Internet protocols. Examples: hypertext transfer protocol, file transfer protocol, telnet, email	Chapter 15, Lesson 5 Chapter 16, Lesson 3
4. Describe recent trends in web technology and predict their impact on web development.	Chapter 16, Lessons 3, 4 Chapter 17, Lesson 1 Chapter 20, Lesson 1

Ethics, Security, and Application in Web Pages	CITATION(S)
5. Demonstrate ethical use of technology and online resources.	Chapter 11, Lesson 1 Chapter 16, Lessons 1, 2
a. Summarize intellectual property laws, including copyright, trademarks, and patents, and explain the consequences of violating each type of law.	Chapter 16, Lesson 1
6. Discuss the process of acquiring rights to use copyrighted and trademarked content in a website.	Chapter 11, Lesson 1 Chapter 16, Lesson 1
7. Explain the importance of information privacy and discuss ways to maintain it. Example: securing credit card information, passwords, and personal information	Chapter 16, Lesson 2
8. Describe the function, advantages, and disadvantages of non-disclosure agreements for individuals and companies.	Chapter 16, Lesson 1

Fundamentals of Web Design	CITATION(S)
9. Incorporate functional design elements into web designs. Examples: proximity, repetition, contrast, alignment, color theory, consistency, image file size, typography	Chapter 10, Lesson 1
10. Identify, create, modify, and use common file formats. Examples: text, image, video (analog and digital), audio files	Chapter 11, Lessons 1, 2 Chapter 19, Lesssons 1, 3
11. Select, create, modify, and integrate effective digital content. Examples: vector-based and raster graphics, motion graphics, video, audio	Chapter 11 Chapter 19
12. Create web pages using current web standards and web development skills. Examples: version control, documentation, web application security, validation, accessibility, compatibility across multiple browsers and devices	Throughout the course, e.g.: Chapter 13, Lesson 2 Chapter 17, Lesson 1 Chapter 20, Lesson 1

Fundamentals of Web Programming	CITATION(S)
13. Differentiate among various web coding standards. Examples: HyperText Markup Language, cascading style sheets	Chapter 1, Lesson 2 Chapter 6, Lesson 5 Chapter 25, Lessons 1, 4
14. Use standard applications to develop web applications. Examples: text-based editing programs, word processors, web authoring software	Chapter 2, Lesson 2 (Text Editors in 1st semester) Chapter 16, Lessons 4, 5 (Komodo Edit in 2nd semester)
15. Explain client-server applications and describe the process of a client-server transaction.	Chapter 13, Lesson 3
16. Identify the advantages and disadvantages of client-side processing.	Chapter 13, Lesson 3 Chapter 25, Lesson 1
17. Use standard scripting languages to produce interactive web applications.	Chapters 25, 26, 27
18. Apply tags, embed links, manipulate space, customize attributes, and incorporate style elements related to typography, margins, and spanning and padding.	Chapters 4, 7, 8, 9, 20
19. Summarize the functions of plug-ins for content management systems and static websites.	Chapter 13, Lesson 3

Web Page Servers and Hosting	CITATION(S)
20. Compare the advantages and disadvantages of running a personal server instead of using a server provider, including cloud/virtual server.	Suppl. Lesson 1
21. Explain the process of constructing secure transaction interfaces from the web server to the customer.	Chapter 16, Lesson 2
22. Explain the Transmission Control Protocol/Internet Protocol.	Chapter 15, Lesson 2
23. Describe the process of establishing a domain name, server backup, and restoration of software features.	Suppl. Lessons 1, 2
24. Evaluate web page security measures. Examples: using a firewall, Secure Socket Layer (SSL) connections, Hypertext Transfer Protocol Secure (HTTPS) transactions, VPN	Chapter 15, Lesson 4 Chapter 16, Lesson 2

Basic Troubleshooting and Validation	CITATION(S)
25. Apply basic troubleshooting strategies to resolve errors in syntax, fix broken links, edit distorted images, and align website content for seamless navigation.	Chapter 3, Lesson 2 Chapter 12, Lesson 1 Chapter 25, Lesson3 Suppl. Lesson 9
26. Analyze methods of performing code validation on a completed or in-progress web page.	Suppl. Lesson 9

a. Validate code for compatibility across browsers and devices.	Chapter 17, Lesson 1 Chapter 20, Lesson 1 Suppl. Lesson 9

Impact of Computing	CITATION(S)
27. Identify ways that technology and the Internet have changed traditional ways of doing business, interacting with others, and exchanging information.	Chapter 13, Lessons 2, 4 Chapter 16, Lesson 3
a. Debate the positive and negative effects of the Internet on personal, ethical, social, economic, and cultural spheres.	N/A (See Digital Savvy, Suppl. Chapter 1)
28. Determine how technology is impacting traditional career pathways and decide which have been most affected, both positively and negatively.	N/A
29. Identify ways that humans and technology must work together as partners in web design to solve problems and determine which parts of the problems are best suited for humans or machines to accomplish. Examples: Artificial Intelligence chatbots, web development tools	Chapter 16, Lessons 3, 4

Design Process	CITATION(S)
30. Use the design thinking process to design websites with fair and equitable content and incorporate feedback based on testing of prototypes by a broad, inclusive audience.	Chapter 13, Lesson 2 Chapter 14, Lesson / Activity 3
31. Use technology during the design process to collaborate with others, including peers, experts, and/or stakeholders, to examine local and global issues and problems from different viewpoints.	Chapter 13, Lesson 1 Chapter 14, Lesson / Activity 1 Suppl. Lesson / Activity 4
32. Research multiple website publishing platforms to determine their suitability for various media types, target audiences, and feedback mechanisms.	N/A
a. Communicate professionally to meet the needs of the audience.	Chapter 14, Lesson / Activity 1 Suppl. Lesson / Activity 4
b. Collaborate as part of a diverse team, using office or team norms.	Chapter 14 Suppl. Lessons 4, 8
33. Analyze user-centered design principles in various models of web design. Examples: print characters, sound, images, video	Chapter 6, Lesson 2 Chapter 10, Lesson / Activity 1

Data	CITATION(S)
34. Use analytics tools to identify patterns in website visits and audience behavior. Example: URL shorteners, analytics tools	Suppl. Lesson 9
35. Create data visualizations to share insight on website user behavior with the client.	Suppl. Lesson 9