

CompuScholar, Inc.

Alignment to Georgia Web Development Standards

Georgia Course Details:

Course Title:	Web Development
Primary Career Cluster:	CTAE / Information Technology
Course Code(s):	11.42500
Standards Link:	Web-Development.pdf

CompuScholar Course Details:

Course Title:	Web Design
Course ISBN:	978-0-9887070-3-0
Course Year:	2019

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.

Course Description

This course, with Hypertext Markup Language (HTML) and Cascading Style Sheet (CSS) as its foundation, will teach students to develop and design responsive web sites through coding, testing, debugging and implementation of web-based services. This course will also allow students to learn about content management systems, client side languages, server side languages, and database concepts. The course is designed to give students foundational knowledge of "front-end" and "back-end" development to address the presentation and data access layers of web site development.

Course Standards

IT-WDEV-1: Standard: Demonstrate employability skills required by business and industry.	CITATION(S)
IT-WDEV-1 standards are identical across all CTAE courses and are intended to be incorporated by the teacher into other lessons as opportunities arise. All CompuScholar courses contain opportunities for effective communication, research, problem solving, creative thought, career exploration and workspace traits, time management and teamwork.	Throughout the course

IT-WDEV-2: Develop a web page using Hypertext Markup Language (HTML) and Cascading Style Sheet (CSS).	CITATION(S)
2.1 Explore the historical significance and progression of web design/development languages (e.g., HTML, CSS, HTML5, and JavaScript).	Chapter 1, Lesson 2 Chapter 16, Lesson 3 Chapter 20, Lesson 1 Chapter 25
2.2 Distinguish between CSS and HTML.	Chapter 6, Lesson 1 Chapter 25, Lesson 4
2.3 Demonstrate knowledge of HTML5 elements.	Chapter 17
2.4 Build a website using <div> tags rather than tables.	Chapter 9
2.5 Evaluate various HTML and CSS frameworks (e.g., HTML5 boilerplate, Bootstrap, Foundation or others).	N / A
2.6 Analyze pros and cons of using a HTML and CSS frameworks.	N / A
2.7 Demonstrate the difference between a class versus ID.	Chapter 7, Lesson 3
2.8 Apply selector, property, and value using HTML5.	Chapter 6, Lessons 1, 3 Chapters 22, 23
2.9 Investigate the pros and cons of using inline styles.	Chapter 6, Lessons 1, 3
2.10 Compare the pros and cons of pixels versus em.	Chapter 7, Lesson 1
2.11 Differentiate between margin and padding.	Chapter 7, Lesson 2
2.12 Apply appropriate positioning to items on a web page.	Chapter 9
2.13 Evaluate compatibility issues for browsers/browser versions and demonstrate ways to overcome those issues.	Chapter 17, Lesson 1 Chapter 20, Lesson 1 Chapter 21, Lesson 3

IT-WDEV-3: Apply concepts of JavaScript to web page development.	CITATION(S)
3.1 Understand scripting in JavaScript and how it applies to web page development.	Chapters 25, 26, 27
3.2 Demonstrate how JavaScript can enhance a project.	Chapters 25, 26, 27
3.3 Compare the pros and cons of using various JavaScript libraries (e.g., jQuery, Prototype, MooTools).	Chapters 26, 27
3.4 Distinguish between variables and functions in writing JavaScript.	N / A
3.5 Explore different causes of JavaScript security, including Cross site scripting (XSS) and the problems with using eval().	Chapter 13, Lesson 3

3.6 Create code from design mockup.	Chapter 27, Lessons 2, 3
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IT-WDEV-4: Create a single functional webpage based on a design mockup and user requirements, perhaps a résumé (Client Side Languages).	CITATION(S)
4.1 Generate HTML that incorporates major formatting tags as well as mixed media assets.	Chapters 3, 4, 11, 19
4.2 Utilize CSS to achieve different visual looks for a webpage without modifying the underlying html.	Chapter 6 and subsequent chapters
4.3 Build a styled HTML page implementing a form that incorporates JavaScript checking and interacts with the data provided.	Supplemental Lesson 11 (Forms Only)
4.4 Implement a third party JavaScript tool and explain how it works and what it does.	Chapters 26, 27
4.5 Write code that is compatible across a given set of web browsers and versions (most notably Internet Explorer (IE), Chrome, Firefox, and Safari).	Chapter 20, Lesson 1 Chapter 21, Lesson 3
4.6 Demonstrate ability to apply security principles to HTML and JavaScript.	Chapter 13, Lesson 3 Chapter 16, Lesson 2 Supplemental Lesson 11
4.7 Evaluate the selection and use of software libraries in building client facing portions of the webpage (e.g., HTML5 Boilerplate, Bootstrap, Foundation, jQuery, Angular).	Chapters 26, 27

IT-WDEV-5: Explain the components needed to develop a dynamic website (Web Development Stack).	CITATION(S)
5.1 Explain the role of the web server in the development stack.	Chapter 13, Lesson 3
5.2 Explain the role of the database in the development stack.	Chapter 13, Lesson 3
5.3 Explain the role of the server side language in the development stack.	Chapter 13, Lesson 3
5.4 Debate the appropriate web stack for a given problem set.	N / A
5.5 Demonstrate security mitigation techniques that can be addressed at each level of the development stack.	Chapter 13, Lesson 3 Chapter 16, Lesson 2

IT-WDEV-6: Use a server side language to build a multi-page website incorporating a web form, at least two templates with shared portions, and data-driven home page (Server Side Languages).	CITATION(S)
6.1 Explore the history of common server side languages (e.g., Ruby On Rails, PHP or others).	N / A
6.2 Explain the differences in server side languages in terms of syntax and function.	N / A
6.3 Debate the merits and use of software design patterns as it relates to a dynamic web site.	N / A

6.4 Build a server script demonstrating language control structures and mathematical computations.	N / A
6.5 Build a script demonstrating data storage using cookies, sessions, a database, and file storage.	N / A
6.6 Write code to perform a file upload and validate the uploaded file against given business rules.	N / A
6.7 Incorporate a third party library into a script and explain what it does and how it works.	N / A
6.8 Explain how a third party library was chosen if multiple libraries with the same purpose are available.	N / A
6.9 Install and configure a Content Management Systems (CMS).	N / A
6.10 Demonstrate ability to apply security principles to Server Side Code as it relates to data storage and display.	N / A
6.11 Explain at least one website attack vector and how to mitigate the risk of that attack.	N / A

IT-WDEV-7 Utilize on-page Search Engine Optimization (SEO) throughout a website.	CITATION(S)
7.1 Apply responsive design and development.	N / A
7.2 Understand search engine crawlers, such as Google, Bing, Yahoo!, and Baidu, in regards to crawling, indexing and ranking of webpages.	Chapter 13, Lesson 4 Supplemental Lesson 3
7.3 Master and apply effective use of meta-tags in HTML head of each webpage of a site (title tag, description tag, and keywords tag) and the URL file name.	Chapter 3, Lesson 1 Chapter 13, Lesson 4
7.4 Understand image optimization of .jpeg, .gif and .png (compressing, html tag).	Chapter 11, Lesson 1
7.5 Plan and employ an internal link strategy of a site.	Chapter 5 Chapter 13, Lesson 1
7.6 Research search engine algorithms, how frequently they are updated, and how they impact a site's ranking.	N / A
7.7 Comprehend and apply best practice techniques for keywords and keywords research.	Chapter 13, Lesson 4
7.8 Apply semantic markup to every page of a site (effectively using H1, H2, H3, paragraph, and list tags).	Chapters 3, 4, 17
7.9 Demonstrate how semantic markup impacts a site's architecture, web coding, usability and display flexibility.	Chapter 17, Lessons 2, 3, 4
7.10 Examine basic SEO tools such as Google Search Console (formerly Google Webmaster Tools) Bing Webmaster Tools, and Google Analytics.	Supplemental Lesson 9 (Google Analytics only)

IT-WDEV-8 Apply concepts involved in the software development life cycle (SDLC) as it pertains to web development.	CITATION(S)
8.1 Explain the different steps of SDLC (Plan, Analyze, Design, Develop, and Implement Maintain).	Chapters 14, 28 (Team Projects) Supplemental Lesson 4

8.2 Research and describe the different types of collaboration platforms used in web development (e.g., GitHub, Apache Subversion (SVN) or others).	N / A
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IT-WDEV-9 Ensure websites meet all special considerations and are in compliance with industry and government regulations.	CITATION(S)
9.1 Explain what encryption (https) is and under what circumstances it would be appropriate to implement on a website.	Chapter 16, Lesson 2
9.2 Research and explain a specialized web compliance practice based on a governmental or industry guideline - Payment Card Industry (PCI), Section 508, American Disability Act (ADA), etc.	Chapter 13, Lesson 2
9.3 Explain how security could differ between an application on the internet vs. an intranet.	N / A
9.4 Determine the fault involved in a data breach and research types of protections pertinent for a particular website.	N / A
9.5 Explore principles of e-commerce as they apply to web development, mobile devices, banking, and government regulations.	N / A

IT-WDEV-10: Examine how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects and competitive events.	CITATION(S)
10.1 Explain the goals, mission, and objectives of the career-technical student organization (CTSO).	Supplemental Lesson 13
10.2 Explore the impact and opportunities a student organization can develop to bring business and education together in a positive working relationship through innovative leadership and career development programs.	Supplemental Lesson 13
10.3 Explore the local, state, and national opportunities available to students through participation in related student organization including but not limited to conferences, competitions, community service, philanthropy, and other CTSO activities.	Supplemental Lesson 13
10.4 Explain how participation in career and technology education student organizations can promote lifelong responsibility for community service and professional development.	Supplemental Lesson 13
10.5 Explore the competitive events related to the content of this course and the required competencies, skills, and knowledge for each related event for individual, team, and chapter competitions.	Supplemental Lesson 13