Texas CTE

Web Design

Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to: 1	**A** demonstrate proficiency in local and online collaboration; 1.A
	B create a website using web editors and web authoring programs; 1.B
	C evaluate the accessibility and usability of an original website as it relates to a target audience; 1.C
	D conceptualize new possible technologies based on current technical trends; 1.D
	E analyze the use of virtualization such as virtual classrooms, distance learning, virtual storage, and a virtual operating system; 1.E
	F demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components; and 1.F
	G make decisions regarding the selection, acquisition, and use of software, taking into consideration its quality, appropriateness, effectiveness, and efficiency. 1.G
Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to: 2	**A** analyze and implement the proper and acceptable use of digital/virtual communications technologies such as instant messaging (IM), chat, email, and social networking; 2.A
	B define and implement the acquisition, sharing, and use of files, taking into consideration their primary ownership and copyright; 2.B
	C apply decisions regarding the selection, acquisition, and sharing of uniform resource locators (URLs) used in research, taking into consideration their quality, appropriateness, and effectiveness; 2.C
	D solve problems using critical-thinking strategies; and 2.D
	E compare, evaluate, and implement the use of wired versus wireless access. 2.E
Research and information fluency. The student applies digital tools to gather, evaluate, and use information. Th to:	**A** verify the accuracy, validity, and currency of acquired information; 3.A
	B conduct effective searches with Boolean operators; 3.B
	C acquire and use appropriate vocabulary terms; 3.C
	:ite sources appropriately using established methods; 3.D

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E model ethical and legal acquisition of digital information following guidelines in the student code of conduct, including plagiarism and copyright laws; 3.E

F identify and discuss emerging technologies and their impact; 3.F

G understand Internet history and structure and how they impact current use; 3.G

H demonstrate appropriate use of grammar, spelling, and vocabulary when creating original work; 3.H

I acquire, evaluate, and use various web standards such as World Wide Web Consortium (W3C), Ecma International, and Internet Corporation for Assigned Names and Numbers (ICANN) to make informed decisions and implement standards in original work; 3.I

J understand, analyze, and use interactive websites; 3.J

K understand, evaluate, and determine the appropriate use of dynamic and static websites; 3.K

L understand, evaluate, and determine the appropriate use of open/closed source file formats and software; 3.L

M explain and demonstrate how search engines work such as advanced options, preferences, advertising, and search categories; 3.M

N evaluate, create, and apply principles of project management, including web storyboards, site maps, job duties, time constraints, group dynamics, communication interaction, and project completion, evaluation, and feedback; 3.N

O understand the use and application of a virtual private network (VPN); 3.O

P distinguish among protocols, including Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP); 3.P

Q summarize the technical needs of a World Wide Web server, including random access memory (RAM), hard disk capacity, central processing unit (CPU) speed, busses, methods of connectivity, and appropriate software; 3.Q

R demonstrate proficiency in the use of a variety of electronic input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen, or digital video by incorporating such components while publishing web pages; 3.R

S demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranets; 3.S

T demonstrate proficiency in and appropriate use and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranets for research and resource sharing; 3.T

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	U construct appropriate search strategies in the acquisition of information from the Internet, including keyword searches and searches with Boolean operators; and 3.U
	V acquire information in electronic formats, including text, audio, video, and graphics, citing the source. 3.V
Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to: 4	**A** demonstrate the transfer and adaptation of knowledge through the creation of original work; 4.A
	B evaluate and implement security measures to protect original work such as firewalls and Hypertext Transfer Protocol Secure (HTTPS); 4.B
	C analyze and follow timelines needed to create, edit, and present original work; 4.C
	D verify current licensing issues for software being used for the creation of original work; 4.D
	E identify and evaluate the design and functionality of web pages using rubrics; 4.E
	F optimize web information for fast download such as dial-up and high-speed Internet and mobile devices; 4.F
	G evaluate original work through self-, peer, and professional review of websites; 4.G
	H evaluate the types, functions, and target audiences of websites; 4.H
	I read, use, and develop technical documents; 4.I
	J analyze, examine, assess, and decide on servers as they relate to the management of a website; 4.J
	K analyze, examine, assess, and decide on a web host; 4.K
	L analyze, examine, assess, and decide on domain name acquisition and retention; 4.L
	M evaluate the functionality of a website such as color scheme, grammar, technological constraints, age appropriateness, cross-platform usability, and user relevant criteria as it relates to an intended audience; 4.M
	N identify software file formats and their characteristics and appropriate use; 4.N
	O identify and apply search engine optimization (SEO) to ensure optimal website visibility; 4.O

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	P investigate and choose electronic security methods for a web server to protect from unauthorized access and negative intentions; and 4.P
	Q draw conclusions from data gathered from electronic and telecommunication resources. 4.Q
Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to: 5	**A** engage in online activities that follow appropriate behavioral, communication, and privacy guidelines, including ethics, personal security, verbiage determined by the intended audience, and ethical use of files and file sharing; 5.A
	B understand the negative impact of inappropriate technology use, including online bullying and harassment; 5.B
	C implement online security guidelines, including identity protection, limited personal information sharing, and password protection of a secure website; 5.C
	D engage in safe, legal, and responsible use of information and technology; 5.D
	E understand and respond to local, state, national, and global issues to ensure appropriate cross-browser and cross-platform usability; 5.E
	F interpret, use, and develop a safe online shared computing environment; 5.F
	G identify legal, ethical, appropriate, and safe website marketing practices; 5.G
	H identify legal, ethical, appropriate, and safe multimedia usage, including video, audio, graphics, animation, and emerging trends; 5.H
	I analyze the impact of the World Wide Web on society through research, interviews, and personal observation; and 5.I
	J participate in relevant and meaningful activities in the larger community and society to create electronic projects. 5.J
Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to: 6	**A** demonstrate knowledge of hardware, including scanners, cameras, printers, video cameras, and external hard drives; 6.A
	B identify the parts of a computer and explain its functions; 6.B
	C summarize the need for and functionality and use of servers; 6.C
	D identify the advantages and disadvantages of running a personal web server versus using a web server provider; 6.D
	E differentiate and appropriately use various input, processing, output, and primary/secondary storage devices; 6.E
	reate and implement universally accessible documents; 6.F

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G analyze bandwidth issues as related to audience, server, connectivity, and cost; 6.G

H establish a folder/directory hierarchy for storage of a web page and its related or linked files; 6.H

I create file and folder naming conventions to follow established guidelines, including spacing, special characters, and capitalization; 6.I

J identify basic design principles when creating a website, including white space, color theory, background color, shape, line, proximity, unity, balance (ratio of text to white space), alignment, typography, font size, type, style, image file size, repetition, contrast, consistency, and aesthetics; 6.J

K demonstrate knowledge of the six core domains (gov, net, com, mil, org, edu) and be familiar with new domain implementation; 6.K

L implement escape codes, HyperText Markup Language (HTML), cascading style sheets (CSS), and javascript through hard coding, web editors, and web authoring programs; 6.L

M identify and use FTP client software; 6.M

N implement java applet insertion; 6.N

O identify and differentiate various network topologies, including physical and logical; 6.O

P create, evaluate, and use web-based animation; 6.P

Q create, evaluate, and use video, including editing, compression, exporting, appropriateness, and delivery; 6.Q

R demonstrate the ability to conduct secure communications from a web server to a client; and 6.R

S use hypertext linking appropriately when creating web pages. 6.S