Web Technologies
Scope and Sequence

IT Cluster
2018-2019
Design Year 5

Vision for Web Technologies Course
In Web Technologies, scholars will learn to make informed decisions and apply the decisions to the field of IT through web site development and the associated tools. Scholars will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. The knowledge and skills acquired and practiced will enable scholars to successfully perform on Web Design Industry Certification exam and interact in a technology-driven society. Additionally, scholars will enhance reading, writing, computing, communication, and critical thinking and apply them to the IT environment.

Year at a Glance

August	September	October	November	December	January	February	March	April	May
Break	Unit 1, Intro to Programming	Unit 2, What is Computing?	Unit 3, JavaScript Control Structures	Break	Unit 4, JavaScript and Graphics	Unit 5, Functions and Parameters	Unit 6, Animations and Games		Break

Time Frame	Unit Title	General Resource(s)
15 Class Periods	**Unit 1: Intro to Programming**	○ PC or Mac with Internet access ○ Adobe Creative Cloud (preferred but can run without) ○ Server ○ Code HS – Web Technology Course ○ Module 1 – Intro to Programming with Karel the Dog ○ Module 2 – What is Computing ○ Module 2 – Digital Information ○ Module 2 – The Internet ○ Module 3 – JavaScript Control Structures ○ Module 4 – JavaScript and Graphics ○ Module 5 – Functions and Parameters ○ Module 6 – Animations and Games
12 Class Periods	**Unit 2: What is Computing?**	
15 Class Periods	**Unit 3: JavaScript Control Structures (includes Midterm Common Project**	
6 Class Periods	**Unit 4, JavaScript and Graphics**	
12 Class Periods	**Unit 5, Functions and Parameters**	
20 Class Periods	**Unit 6, Animations and Games (includes Final Common Project)**	

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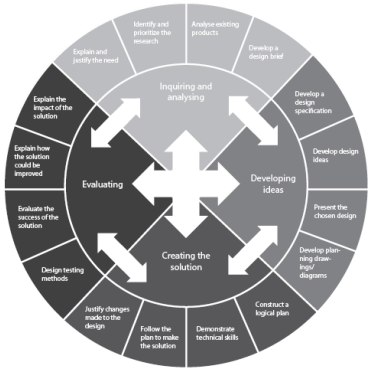

Objectives

A. Inquiring and analyzing Students are presented with a design situation, from which they identify a problem that needs to be solved. They analyse the need for a solution and conduct an inquiry into the nature of the problem. In order to reach the aims of design, students should be able to: i. explain and justify the need for a solution to a problem ii. construct a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem iii. analyse a group of similar products that inspire a solution to the problem iv. develop a design brief, which presents the analysis of relevant	**B. Developing ideas** Students design tests to evaluate the solution, carry out those tests and objectively evaluate its success. Students identify areas where the solution could be improved and explain how their solution will impact on the client or target audience. In order to reach the aims of design, students should be able to: i. develop a design specification, which outlines the success criteria for the design of a solution based on the data collected ii. present a range of feasible design ideas, which can be correctly interpreted by others iii. present the chosen design and outline the reasons for its selection iv. develop accurate planning drawings/diagrams and outline requirements for the creation of the chosen solution.
C. Creating the solution Students plan the creation of the chosen solution and follow the plan to create a prototype sufficient for testing and evaluation. In order to reach the aims of design, students should be able to: i. construct a logical plan, which outlines the efficient use of time and resources, sufficient for peers to be able to follow to create the solution ii. demonstrate excellent technical skills when making the solution iii. follow the plan to create the solution, which functions as intended iv. explain changes made to the chosen design and plan when making the solution v. present the solution as a whole.	**D. Evaluating** Students design tests to evaluate the solution, carry out those tests and objectively evaluate its success. Students identify areas where the solution could be improved and explain how their solution will impact on the client or target audience. In order to reach the aims of design, students should be able to: i. describe detailed and relevant testing methods, which generate accurate data, to measure the success of the solution ii. explain the success of the solution against the design specification iii. describe how the solution could be improved iv. describe the impact of the solution on the client/target audience.

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REQUIRED			EXAMPLES – May Be Altered According to School/Teacher Choice		
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
16 Class Periods	**Unit 1: Intro to Programming** **Key Components:** ○ The language of web pages; i.e. HTML ○ HTML Tag ○ Adding images, lists and tables ○ Expressive styling ○ CSS tags and styles ○ CSS Selectors by ID ○ URLs and websites ○ Naming conventions ○ Control structures Back to Table of Contents See in Calendar	1.C 1.E 2.D 3.C 5.A 6.A 6.B 6.C 6.D 7.A 7.B 7.C 7.D 8.A 8.B	**Statement of Inquiry:** Knowledge may influence Society in many diverse ways. **Key Concepts** Communication **Related Concepts** Evaluation Resources **Global Context** Identities and relationships: **Approaches to Learning:** Self-management: Organization Communication: Communication Skills Research: Information literacy skills	**Project: Your First Website** **GOAL**: Develop your first digital artifact; a website! **ROLE**: You are a new website designer who wants to create an online portfolio to display your work. **AUDIENCE**: Your peers, teachers, and future potential boss. **SITUATION**: In order to build a reputation for being a great web designer, you must build a portfolio to display your work. **PRODUCT**: Scholars will create their first website that will serve as their own personal homepage. By the end of the course, this homepage will serve as their own personal portfolio website showcasing your work! **STANDARDS**: Criterion A & C Criterion A: Inquiring and Analyzing Criterion C: Creating the Solution	Code HS – Web Technology Course ○ Module 1 – Intro to Programming with Karel the Dog ○ Your First Website Project
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
12 Class Periods	**Unit 2: What is Computing?** **Key Components:** ○ History of computers and internet ○ Input/output devices ○ Networking ○ Future Computing: AI and DNA ○ Storing and manipulating information ○ Number systems: binary, decimal, hexadecimal	1.A 1.B 1.C 1.D 1.E 3.A 3.B 3.C 3.D	**Statement of Inquiry:** By collaborating together, systems allow us to extend our creativity. **Key Concepts:** Systems **Related Concepts:** Collaboration	**Project – The Effects of the Internet** **GOAL**: In this performance task, scholars choose an innovation that was enabled by the Internet and explore the effects of this innovation. **ROLE**:	Code HS – Web Technology Course ○ Module 3 – What is Computing ○ Module 3 – Digital Information ○ Module 3 – The Internet ○ The Effects of the Internet Project

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	○ Pixel encoding and manipulation ○ What makes up the internet; DNS, IP, routing, packets and protocols [Back to Table of Contents](#) [See in Calendar](#)	4.A 4.B 4.C 4.D 4.E 4.F 4.G 4.H 4.I 4.J 7.A 7.B 7.C 7.D 7.E 7.F 7.G 7.H 7.I 7.J	**Global Context:** Personal and Cultural expression **Approaches to Learning:** Self-management: Reflection skills Thinking: Creative thinking skills	You are a blogger with over 1,000 followers who also writes for major tech companies. **AUDIENCE**: Your current followers and those whom you hope will start following. **SITUATION**: You need to keep your feed current so readers will not lose interest, so you have decided to write about the impact of the internet in a new and creative way. **PRODUCT**: Scholars will produce a computational artifact (visualization, a graphic, a video, a program, or an audio recording that you create using a computer) and written responses to several prompts. **STANDARDS**: Criterion C & D Criterion C: Creating the Solution Criterion D: Evaluating	

REQUIRED			REQUIRED		
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
20 Class Periods	**Unit 3: JavaScript Control Structures (includes midterm common project)** **Key Components:** ○ Boolean ○ Operators: logical, comparison ○ Loops: for, while, loop-and-a-half ○ Randomizer	6.A 6.B 6.C 6.D 6.E 6.F 7.A 7.B 7.C 7.D 7.E 7.F 7.G 7.H 7.I 7.J	**Statement of Inquiry:** Understanding and utilizing code and technology can create innovation and collaboration in a society. **Key Concepts** Systems **Related Concepts** Perspective **Global Context** Scientific and technical innovation	**GOAL**: The goal of this unit is to create a fictional business website using their programming skills. **ROLE**: You are a graphic designer who will create a fictional business website to be posted online. **AUDIENCE**: The audience in this scenario is the customers who visit your website. **SITUATION**: You are the web designer of a fictional business website. The	Code HS – Web Technology Course ○ Module 3 – JavaScript Control Structures

	. [Back to Table of Contents](#) [See in Calendar](#)		**Approaches to Learning:** Thinking: Creative thinking skills Self-management: Organization Skills	website must meet the criteria set up in the Evaluation Form. **PRODUCT**: The scholar will design and create a website. **STANDARDS**: This is a product for a business. Consider quality control when designing and creating the final published product. The website must meet the criteria established by the Evaluation Form. The following things should be considered when evaluating the final product; All of Phase 1 and 2 objectives have been met. All structural requirements and design elements on the Evaluation have been considered and addressed in the completion of the project. Criterion A, B, C, and D should be addressed Criterion A: Inquiring and Analyzing Criterion B: Developing Ideas Criterion C: Creating the Solution Criterion D: Evaluating	

REQUIRED			**EXAMPLES – May Be Altered According to School/Teacher Choice**		
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
6 Class Periods	**Unit 4, JavaScript and Graphics** **Key Components:** ○ Functions and variables ○ User input ○ Basic math in JavaScript ○ Using graphics	4.A 4.B 4.C 4.D 4.E 4.F 4.G 4.H 4.I 4.J 6.A 6.B	**Statement of Inquiry:** Creating code can connect communities and may enhance knowledge. **Key Concepts** Communication **Related Concepts** Collaboration **Global Context** Personal and cultural expression	**GOAL**: Create graphical JavaScript programs that draw shapes on the canvas **ROLE**: You are a JavaScript programmer who is preparing a career portfolio. **AUDIENCE**: Your peers and teachers who will test your program. **SITUATION**:	Code HS – Web Technology Course ○ Module 4 – JavaScript and Graphics

	Back to Table of Contents See in Calendar	6.C 6.D 6.E 6.F	**Approaches to Learning:** Thinking: Creative thinking skills	Getting a job as a JavaScript programmer isn't easy. To give yourself a leg up on the competition, you want to add more material to your digital portfolio. **PRODUCT**: Scholars will create a series of graphic objects in JavaScript: Blue Circle, Red Rectangle, 8 Ball, French Flag, and a Snowman. **STANDARDS**: Criterion C & D Criterion C: Creating the Solution Criterion D: Evaluating	
REQUIRED			**EXAMPLES – May Be Altered According to School/Teacher Choice**		
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
12 Class Periods	**Unit 5, Functions and Parameters** **Key Components:** ○ Functions and parameters ○ Return values ○ Local variables and scope Back to Table of Contents See in Calendar	3.A 3.B 3.C 3.D 7.D 7.E 7.F 7.G 8.A 8.B	**Statement of Inquiry:** Adapting code and technology can improve innovation and development of ideas and systems. **Key Concepts** Development **Related Concepts** Adaptation Form **Global Context** Identities and relationships **Approaches to Learning:** Self-management: Organization Skills Thinking: Critical Thinking Skills	**Project: JavaScript and Graphics Challenge** **GOAL**: Use your knowledge of basic JavaScript to create some fun programs! **ROLE**: You are a JavaScript programmer who is preparing a career portfolio. **AUDIENCE**: Your peers and teachers who will test your program. **SITUATION**: Getting a job as a JavaScript programmer isn't easy. To give yourself a leg up on the competition, you want to add more material to your digital portfolio. **PRODUCT**: Scholars will create their own Ghost drawings from Pac-Man, a Guessing Game, and a drawing of their own choosing. **STANDARDS**: Criterion B & C	Code HS – Web Technology Course ○ Module 5 – Functions and Parameters ○ JavaScript and Graphics Challenge (Module 6)

				Criterion B: Developing Ideas Criterion C: Creating the Solution	
REQUIRED			**REQUIRED**		
Time Frame	**Unit Number, Title, and Key Components**	**TEKS**	**IB Connections**	**Assessment Task(s)/MYP Objective(s)**	**Resources**
20 Class Periods	**Unit 6, Animations and Games (includes Common Project)** **Key Components:** ○ Timers ○ Randomizing elements ○ Bouncing ○ Mouse events ○ Key events ○ Creating lines Back to Table of Contents See in Calendar	1.A 1.B 1.C 1.D 1.E 5.A 5.B 5.C 6.A 6.B 6.C 6.D 6.E 6.F 7.A 7.B 7.C 7.D 7.E 7.F 7.G 7.H 7.I 7.J	**Statement of Inquiry:** Understanding and utilizing code and technology can create innovation and collaboration in a society. **Key Concepts** Systems **Related Concepts** Perspective **Global Context** Scientific and technical innovation **Approaches to Learning:** Thinking: Creative thinking skills Social: Collaboration skills	**Project: Project Breakout** **GOAL**: Bring everything scholars have learned in semester 2 into the creation of something new. **ROLE**: Game designer who wants to work for a major company. **AUDIENCE**: Peers, teacher, and potential employer. **SITUATION**: Scholars continue to build their digital portfolio to showcase computational thinking skills. **PRODUCT**: Scholars will create their very own breakout video game. **STANDARDS**: Criterion A-D Criterion A: Inquiring and Analyzing Criterion B: Developing Ideas Criterion C: Creating the Solution Criterion D: Evaluating	Code HS – Web Technology Course ○ Module 6 – Animations and Games ○ Project Breakout (Module 8)

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August 2018

Keep in mind:

- **MAP Testing Window: 8/20—9/21**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7 First Day of School	8 SLA	9	10	11
12	13 Intro to Programming	14	15	16	17	18
19	20 Intro to Programming	21	22	23	24	25
26	27 Intro to Programming	28	29	30	31	

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September 2018

Keep in mind:

- **MAP Testing Window: 8/20—9/21**
- **CA 1 Testing Window: 9/24-10/3**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 HOLIDAY	4 Intro to Programming	5	6	7 EPAS Testing (HS)	8
9	10 Intro to Programming	11	12	13	14	15
16	17 Intro to Programming	18	19	20	21	22
23	24 What is Computing?	25	26	27	28	29
30						

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October 2018

Keep in mind:

- **CA 1 Testing Window: 9/24-10/3**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4 END OF Q1	5 COLLAB DAY 1	6
	What is Computing?					
7	8 HOLIDAY	9	10	11	12	13
		What is Computing?				
14	15	16	17	18	19	20
	What is Computing?					
21	22	23	24 SCHOLAR HALF DAY	25	26	27
	What is Computing?					
28	29	39	31			
	JavaScript Control Structures					

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November 2018

Keep in mind:

- **Event (Date Range)**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
				JavaScript Control Structures		
4	5	6	7	8	9	10
	JavaScript Control Structures					
11	12	13	14	15	16	17
	JavaScript Control Structures					
18	19 FALL BREAK	20 FALL BREAK	21 FALL BREAK	22 FALL BREAK	23 FALL BREAK	24
25	26	27	28	29	30	
	JavaScript Control Structures					

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December 2018

Keep in mind:

- **EOC Retesting Window: 12/3-12/6**
- **CA 2 Testing Window: 12/10-12/19**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
	JavaScript Control Structures					
9	10	11	12	13	14	15
	JavaScript Control Structures					
16	17 SCHOLAR HALF DAY	18 SCHOLAR HALF DAY	19 SCHOLAR HALF DAY	20 SCHOLAR HALF DAY END OF Q2/S1	21 WINTER BREAK	22
23	24 WINTER BREAK	25 WINTER BREAK	26 WINTER BREAK	27 WINTER BREAK	28 WINTER BREAK	29
30	31 WINTER BREAK					

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January 2019

Keep in mind:

- **MAP Testing Window: 1/17-2/22**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 WINTER BREAK	2 WINTER BREAK	3 WINTER BREAK	4 WINTER BREAK	5
6	7 COLLAB DAY 2	8 CAMPUS PD	9 First Day of Semester 2	10 JavaScript and Graphics	11	12
13	14 JavaScript and Graphics	15	16	17	18	29
20	21	22 JavaScript and Graphics	23	24	25	26
27	28 Web Design Practice Exam	29	30	31		

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February 2019

Keep in mind:

- **MAP Testing Window: 1/17-2/22**
- **CA 3 Testing Window: 2/19-3/1**
- **TELPAS Window: 2/25-4/5**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7 EPAS Testing (HS)	8	9
10	11	12	13	14	15	16
17	18 HOLIDAY	19	20	21	22	23
24	25	26	27	28		

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Functions and Parameters

Functions and Parameters

Functions and Parameters

Functions and Parameters

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March 2019

Keep in mind:

- **CA 3 Testing Window: 2/19-3/1**
- **TELPAS Window: 2/25-4/5**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
					Functions and	
3	4	5	6	7 **END OF Q3**	8 **COLLAB DAY 3**	9
	Functions and Parameters					
10	11 **SPRING BREAK**	12 **SPRING BREAK**	13 **SPRING BREAK**	14 **SPRING BREAK**	15 **SPRING BREAK**	16
17	18	19	20	21	22	23
	Animations and Games					
24	25	26	27 **SCHOLAR HALF DAY**	28	29 **HOLIDAY Bad Weather Make-Up**	30
	Animations and Games					

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April 2019

Keep in mind:

- **TELPAS Window: 2/25-4/5**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 ACT Testing	3	4	5	6
	Animations and Games					
7	8	9 7th Writing STAAR 8th Math STAAR English I EOC	10 8th Reading STAAR	11 English II EOC	12	13
	Animations and Games					
14	15	16	17	18	19 HOLIDAY Bad Weather Make-Up	20
	Animations and Games					
21	22	23	24 ACT Make-Up	25	26	27
	Animations and Games					
28	29	30				
	Animations and Games					

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May 2019

Keep in mind:

- **Senior Finals/CA 4 Testing Window 5/13-5/15**
- **High School CA 4 Testing Window 5/20-5/23**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
			Animations and Games			
5	6 Biology EOC	7 Algebra I EOC	8 US History EOC	9	10	11
	Animations and Games					
12	13	14 7th Reading STAAR	15 8th Science STAAR	16 8th Humanities STAAR	17	18
	Animations and Games			Web Design Certification Exam		
19	20	21 SCHOLAR HALF DAY	22 SCHOLAR HALF DAY	23 SCHOLAR HALF DAY	24 SCHOLAR HALF DAY Last Day of School	25
	Web Design					
26	27 HOLIDAY	28 CAMPUS PD	29	30	31	

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130.279. Web Technologies TEKS (One Credit - 2017)

(a) **General requirements**. This course is recommended for students in Grades 10-12.
Recommended prerequisite: Principles of Information Technology. Students shall be awarded 1 credit for successful completion of this course.
(b) **Introduction**.
(1) CTE instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
(2) The Information Technology Career Cluster focuses on Building linkages in IT occupations for entry level, technical and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.
(3) Introduction. Through the study of web technologies and design, students learn to make informed decisions and apply the decisions to the field of information technology. Students implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society. Students enhance reading, writing, computing, communication, and critical thinking and apply them to the information technology environment.
(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.
(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
(c) Knowledge and skills.
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:
- (A) identify and demonstrate positive work behaviors and personal qualities that enhance employability and job advancement such as regular attendance, attention to proper attire, maintenance of a clean and safe work environment, and pride in work, flexibility, initiative and employ effective verbal and nonverbal communication skills
- (B) examine the role of certifications, resumés, and portfolios in the web technology profession;
- (C) solve problems and think critically;
- (D) demonstrate leadership skills and function effectively as a team member;
- (E) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies employment opportunities in the information technology field with a focus in the area of interactive media. The student is expected to:
- (A) identify job opportunities and accompanying job duties and tasks;
- (B) research careers of personal interest along with the education, job skills, and experience required to achieve personal career goals;
- (C) demonstrate an understanding of the functions of resumés and portfolios; and
- (D) create a portfolio.

(3) The student demonstrates knowledge and appropriate use of hardware, software, and connectivity technologies. The student is expected to:
- (A) Identify networking components and define the impact of networking components on web development;
- (B) evaluate the various input, processing, output, storage devices and storage services;
- (C) identify current and future Internet protocols such as hypertext transfer protocol, file transfer protocol, telnet, and email; and
- (D) describe new trends in web technology and evaluate their impact on web development.

(4) The student complies with practices and behaviors that meet legal and ethical responsibilities. The student will
explain and demonstrate ethical use of technology and online resources;
- (A) Explain and demonstrate ethical use of technology and online resources;
- (B) differentiate between copyright and trademarks;
- (C) explain the concept of intellectual property laws including copyright, trademarks and patents and consequences of violating each type of law;
- (D) examine the consequences of plagiarism;
- (E) adhere to copyright and trademark intellectual property laws and regulations, including demonstrating correct acquisition and citation of sources;
- (F) discuss the process of acquiring rights to use copyrighted and trademarked content in a web site;
- (G) demonstrate appropriate behavior and adherence to acceptable use policies when accessing and using online resources;
- (H) explain the importance of information privacy such as securing credit card information, passwords, and personal information;
- (I) describe the function of a non-disclosure agreement; and
- (J) discuss website accessibility concerns.

(5) The student evaluates electronic information. The student is expected to:
- (A) identify appropriate methods to analyze the design and functionality of web pages; and
- (B) demonstrate skill in testing the accuracy and validity of information acquired.; and

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(C) synthesize information from data acquired from online resources.

(6) The student creates and modifies web and digital media designs. The student is expected to:
- (A) implement functional design elements such as proximity, repetition, contrast, alignment, color theory, consistency, image file size, and typography;
- (B) identify, create, modify, and use common file formats such as text, image, video analog and digital, and audio files;
- (C) select, create, modify, and integrate effective digital content such as vector-based and raster graphics, motion graphics, video, and audio;
- (D) create web pages utilizing current web standards and web development skills such as version control, documentation, web application security, validation, accessibility, and compatibility across multiple browsers and devices;
- (E) demonstrate proper use of folder structure hierarchy; and
- (F) use web coding standards to evaluate the design and functionality of web pages such as the W3C (World Wide Web Consortium) guidelines.

(7) The student demonstrates and employs knowledge of Internet programming strategies to develop and maintain web applications. The student is expected to:
- (A) explain the importance of Internet programming standards;
- (B) differentiate among various web coding standards such as HyperText Markup Language, and cascading style sheets;
- (C) use standard applications to develop web applications such as text-based editing programs, word processors; and web authoring software;
- (D) compare and contrast the impact of different browsers on web development.;
- (E) explain client-server applications and describe the process of a client-server transaction;
- (F) identify the advantages and disadvantages to client-side processing;
- (G) identify security issues related to client-side processing;
- (H) use standard scripting languages to facilitate interactivity produce interactive web applications;
- (I) identify characteristics of various scripting languages; and
- (J) demonstrate the ability explain the process to construct secure transaction interfaces from the web server to the customer.

(8) The student employs knowledge of web administration to develop and maintain web applications. The student is expected to:
- (A) compare the advantages and disadvantages of running a personal server versus using a server provider;
- (B) explain the Transmission Control Protocol/Internet Protocol;
- (C) identify hardware and software requirements for web servers;
- (D) evaluate server providers;
- (E) describe the process of establishing a domain name;
- (F) simulate the administration of web servers, including uploading and managing files;
- (G) collect and analyze usage statistics;
- (H) maintain documentation of the server environment such as specifications, passwords, and software versions;
- (I) summarize the process of server backup and restoration of software features;
- (J) propose security measures to protect web servers from electronic threats such as unauthorized access and negative intentions; and
- (K) evaluate security measures such as using a firewall, SSL (Secure Socket Layer) connections and HTTPS (Hypertext Transfer Protocol Secure) transactions.

(9) The student evaluates a problem and creates a project management plan for meeting client requirements. The student is expected to:
- (A) communicate with clients to analyze requirements to meet the needs of the client and target audience;
- (B) document design properties, necessary tools and resources, and identify and address risks;
- (C) develop and use a timeline task list such as critical milestones, potential challenges, and interdependencies; and
- (D) use various methods to evaluate the progress of the plan and modify as necessary.

(10) The student creates and implements a web product using a project management plan. The student is expected to:
- (A) create and simulate the publication of a multipage web product using client required content and web design concepts;
- (B) develop a test plan for a multipage web product for testing usability, effectiveness, reliability, and customer acceptance;
- (C) explain the quality assurance process; and
- (D) develop and implement a quality assurance plan.