



## Scope & Sequence

<b>Course Name:</b> Web Technologies <b>TSDS PEIMS Code:</b> 13027900		<b>Course Credit:</b> 1.0 <b>Course Requirements:</b> Grade Placement 10-12. <b>Prerequisite:</b> None. <b>Recommended Prerequisite:</b> Principles of Information Technologies.
<b>Course Description:</b> In Web Technologies, students will learn to make informed decisions and apply the decisions to the field of IT. Students will 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 will enhance reading, writing, computing, communication, and critical thinking and apply them to the IT environment.		
<b>NOTE:</b> This is a suggested scope and sequence for the course content. This content will work with any textbook or instructional materials. If locally adapted, make sure all TEKS are covered.		
<b>Total Number of Periods</b> <b>Total Number of Minutes</b> <b>Total Number of Hours</b>	175 Periods 7920 Minutes 132 Hours*	*Schedule calculations based on 175/180 calendar days. For 0.5 credit courses, schedule is calculated out of 88/90 days. Scope and sequence allows additional time for guest speakers, student presentations, field trips, remediation, extended learning activities, etc.
<b>Unit Number, Title, and Brief Description</b>	<b># of Class Periods*</b> (assumes 45-minute periods) Total minutes per unit	<b>130.308. (c) Knowledge and Skills TEKS Covered</b>



Information  
Technology

--	--	--



<p><b>Unit 2: Frameworks of Webpages in Networking</b></p> <p>Students will engage in opportunities to develop skilled and technical hands-on activities that will enhance the understanding and knowledge of frameworks of webpages in networking. Students will synthesize and demonstrate knowledge by identify the role of webpages in network communication and the trends in webpage coding languages.</p>	<p>10 periods 450 minutes</p>	<p>(3) The student demonstrates knowledge and appropriate use of hardware, software, and connectivity technologies. The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) identify networking components and define the impact of networking components on web development;</li> <li>(B) evaluate the various input, processing, output, and storage devices and storage services;</li> <li>(C) identify current and future Internet protocols such as hypertext transfer protocol, file transfer protocol, telnet, and email; and</li> <li>(D) describe new trends in web technology and evaluate their impact on web development.</li> </ul>
<p><b>Unit 3: Ethics, Security, and Application in Webpages</b></p> <p>Student will engage in opportunities to develop skills in ethical procedures in webpages. Students will participate in</p>	<p>10 periods 450 minutes</p>	<p>(4) The student complies with practices and behaviors that meet legal and ethical responsibilities. The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) explain and demonstrate ethical use of technology and online resources;</li> <li>(B) differentiate between copyright and trademarks;</li> <li>(C) explain the concept of intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;</li> <li>(D) examine the consequences of plagiarism;</li> </ul>



**Information  
Technology**

group activities to enhance intellectual property law, copyright, trademarks, patents and violation of these laws. Students will discuss security needs for personal identity protection in webpage data.



<p><b>Unit 4: Fundamentals of Web Design</b></p> <p>Students will engage in opportunities to develop software skills in webpage design. Students will synthesize and demonstrate knowledge by utilizing hands-on skills activities that will enhance the use of webpage design focusing on projects to apply the principles and elements of design into creating a webpage. Students will create webpages using various coding methods and advanced webpage structures.</p>	<p>50 periods 2250 minutes</p>	<p>(6) The student creates and modifies web and digital media designs. The student is expected to:</p> <ul style="list-style-type: none"><li>(A) implement functional design elements such as proximity, repetition, contrast, alignment, color theory, consistency, image file size, and typography;</li><li>(B) identify, create, modify, and use common file formats such as text, image, video analog and digital, and audio files;</li><li>(C) select, create, modify, and integrate effective digital content such as vector-based and raster graphics, motion graphics, video, and audio;</li><li>(D) create web pages using current web standards and web development skills such as version control, documentation, web application security, validation, accessibility, and compatibility across multiple browsers and devices;</li><li>(E) demonstrate proper use of folder structure hierarchy; and</li><li>(F) use web coding standards to evaluate the design</li></ul>



<p><b>Unit 5: Fundamentals of Web Programming</b></p> <p>Students will engage in opportunities to develop software skills in webpage programming. Students will synthesize and demonstrate knowledge by utilizing hands-on skills activities that will enhance the use of webpage programming focusing on projects to apply the fundamentals of webpage design. Students will create advanced webpage programs and applications using varying coding methods and advanced programming languages.</p>	<p>50 periods 2250 minutes</p>	<p>(7) The student demonstrates and employs knowledge of Internet programming strategies to develop and maintain web applications. The student is expected to:</p> <ul style="list-style-type: none"><li>(A) explain the importance of Internet programming standards;</li><li>(B) differentiate among various web coding standards such as HyperText Markup Language, and cascading style sheets;</li><li>(C) use standard applications to develop web applications such as text-based editing programs, word processors, and web authoring software;</li><li>(D) compare and contrast the impact of different browsers on web development;</li><li>(E) explain client-server applications and describe the process of a client-server transaction;</li><li>(F) identify the advantages and disadvantages of client-side processing;</li><li>(G) identify security issues related to client-side processing;</li><li>(H) use standard scripting languages to produce interactive web applications;</li><li>(I) identify characteristics of various scripting languages; and</li><li>(J) explain the process to construct secure transaction interfaces from the web server to the customer.</li></ul>



<p><b>Unit 6: Webpage Servers and Hosting</b></p> <p>Students will engage in opportunities to develop skills and knowledge in webpage hosting. Students will synthesize and demonstrate knowledge by utilizing hands-on skills activities that will enhance the skills of hosting a webpage from a remote server. Students will maintain advanced webpages on public hosted servers, and collect statistical webpage data on usage.</p>	<p>20 periods 900 minutes</p>	<p>(8) The student employs knowledge of web administration to develop and maintain web applications. The student is expected to:</p> <ul style="list-style-type: none"><li>(A) compare the advantages and disadvantages of running a personal server versus using a server provider;</li><li>(B) explain the Transmission Control Protocol/Internet Protocol;</li><li>(C) identify hardware and software requirements for web servers;</li><li>(D) evaluate server providers;</li><li>(E) describe the process of establishing a domain name;</li><li>(F) simulate the administration of web servers, including uploading and managing files;</li><li>(G) collect and analyze usage statistics;</li><li>(H) maintain documentation of the server environment such as specifications, passwords, and software versions;</li><li>(I) summarize the process of server backup and restoration of software features;</li><li>(J) propose security measures to protect web servers from electronic threats such as unauthorized access and negative intentions; and</li></ul>



<p><b>Unit 7: Webpage Consulting and Project Management</b></p> <p>Students will engage in opportunities to develop skills and knowledge in consulting and project management. Students will synthesize and demonstrate knowledge by utilizing hands-on skills activities that will enhance the skills designing a webpage for a client. Students will meet with a client to design, develop, and create a custom webpage to be hosted on a remote server and will provide the client with usage data and site analytics.</p>	<p>25 periods 1125 minutes</p>	<p>(9) The student evaluates a problem and creates a project management plan for meeting client requirements. The student is expected to:</p> <ul style="list-style-type: none"><li>(A) communicate with clients to analyze requirements to meet the needs of the client and target audience;</li><li>(B) document design properties, necessary tools, and resources and identify and address risks;</li><li>(C) develop and use a timeline task list such as critical milestones, potential challenges, and interdependencies; and</li><li>(D) use various methods to evaluate the progress of the plan and modify as necessary.</li></ul> <p>(10) The student creates and implements a web product using a project management plan. The student is expected to:</p>





Information  
Technology

--	--	--