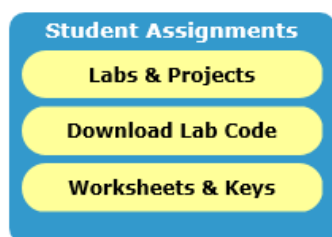


IE Class Web Design Curriculum

Course Outline – Web Technologies 130.279

Unit 1: Foundations

Lesson	Topics Covered	Exercises	TEKS (Texas Only)
The Foundation lessons will provide students with a general understanding of computers, how the internet works, the web design process, how to acquire web hosting and publish to it, and other concepts that any web designer should be familiar with.			
Lesson 1	Preparing for the Course: Students are introduced to course and IE Class system. Students are instructed as to the necessary file system that they will need to create for the course. Proper netiquette on networks, and Internet and computer safety, and acceptable use policies are also discussed. Students will learn about client-server applications and web content delivery and associated applications.	Lecture Notes Worksheet Lesson 1 Worksheet	1b, 1g, 4c, 7d,
Lesson 2	Computer Basics: Students are given an overview of the various components, including the hardware and software of the computer and how they work together.	Lecture Notes Worksheet Lesson 2 Worksheet	3a, 3b, 3d
Lesson 3	Introduction to the Internet: Students learn about the history of the Internet. They will also learn about the type of content online, and delivery enablers available, and how information is transferred. New trends in web and Internet technology are also covered.	Lecture Notes Worksheet Lesson 3 Worksheet Crossword 3 Web Search Activity	3c, 3e, 3f, 4c, 5d, 9a, 9b, 10b, 10c,
Lesson 4	The Web Design Process: The planning process of web site development is covered, including the various web site structures. The components of page layout and design are also covered. Students will learn to evaluate and meet customer & client requirements when developing web projects. They will learn to evaluate web projects and to develop a Quality Assurance Plan.	Lecture Notes Worksheet Crossword 4 Lesson 4 Worksheet Web Site Planning Design Evaluation Quality Assurance Plan	6a, 6b, 7a, 12b, 12c, 12d
Lesson 5	Color Theory: Students will learn the basics using color in their site, how the computer generates different colors, about the RGB color scale, the different color schemes, and how to logically select colors for their site based on a specific color scheme.	Lecture Notes Worksheet Lesson 5 Worksheet	7a
Lesson 6	Copyright Guidelines: Students are given an overview of copyright guidelines relevant to commercial web design. The copyright qualifications are explained as well as what is and is not available in the public domain. The Fair Use Guidelines are also introduced.	Lecture Notes Worksheet Lesson 6 Worksheet Crossword Lesson 6	1h, 4a, 4b
Lesson 7	Website Administration: This lesson will teach students the fundamentals of managing their websites. They will learn the process of acquiring a domain name, the basics of web servers, including types of servers and how to select a web server. Students will also learn the process of uploading their web pages to a web server.	Lecture Notes Worksheet Lesson 7 Worksheet Simulation Activity	9a, 10a, 10d, 10e, 10f, 10g 10h, 10i, 10j, 10k
Lesson 8	Career Exploration: Students will learn about the web design industry and various fields. Topics will discuss the various required skills and education levels to obtain a job in website design.	Lecture Notes Worksheet Lesson 8 Worksheet Personal Inventory Career Exploration	1a, 1c, 2a, 2b, 2c, 2d



← All Worksheets can be accessed under the **Worksheets & Keys** tab.

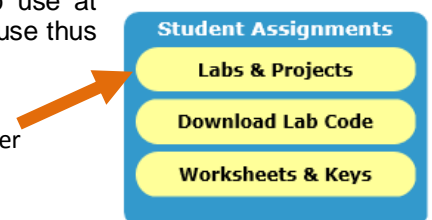
Unit 2: Web Graphics

Lesson	Topics Covered	Exercise	TEKS (Texas Only)
Students will be introduced to the basic concepts of graphic editing and how to prepare images for use on their web pages. Students will also learn how to create quality images from scratch using the concepts that are common in most graphics packages. The featured graphics package in this unit is GIMP. GIMP is a freely distributed Open Source graphics package that is capable of performing many of the functions of Photoshop or Fireworks, and can save images in the native formats of those packages. GIMP is free for anyone to download and install, including students and teachers, and free for school to teach.			
Lesson 1	Basic Concepts: This lesson will cover the different image types, image resolution concepts, and terminology. Students will also be introduced to the GIMP interface and how to open and save images.	Guided Practice Lesson 1 Worksheet Lab 1-1 Lab 1-2 Lab 1-3	5c, 7b, 7d
Lesson 2	Cropping and Resizing: This lesson will focus on preparing existing images for use on the web. Students will learn to use GIMP to resize images and to crop images down.	Guided Practice Lab 2-1 Lab 2-2	5c, 7b, 7d
Lesson 3	Working with Filters: This lesson will give students experience in modifying and enhancing images using the filter tools built into GIMP.	Guided Practice Lab 3-1 Lab 3-2	5c, 7b, 7d
Lesson 4	Selected Regions: Students will learn about the various selection tools, how each works, and use the tools to edit various parts of images.	Guided Practice Lab 4-1 Lab 4-2 Lab 4-3 Lab 4-4	5c, 7b, 7d
Lesson 5	Text & Automation: Students will learn to manipulate and enhance text to create banners for their website. GIMP's automated design tools will be utilized.	Guided Practice Lab 5-1 Lab 5-2	5c, 7b, 7d
Lesson 6	Creating Image Maps: Students will learn about Image Maps and how to use the Image Map feature in GIMP to create custom image maps for their sites.	Guided Practice Lab 6-1 Lab 6-2	5c, 7b, 7d
Lesson 7	Working With Layers: Students will learn what layers are and how they are used with graphic design.	Guided Practice Lab 7-1 Lab 7-2 Lab 7-3 Lab 7-4	5c, 7b, 7d
Lesson 8	Image Colorization: Students will learn how to manipulate colors of images and how to add colors to individual sections of black & white images.	Guided Practice Lab 8-1 Lab 8-2	5c, 7b, 7d
Lesson 9	Motion Graphics: Students will learn the basics of simple motion graphics, and how to create animated GIF type images for their web pages.	Guided Practice Lab 9-1 Lab 9-2 Lab 9-3	5c, 7b, 7d
Graphics Portfolio Project: Students will use the skills they have learned in the GIMP unit to design web graphics for 3 different web sites. Each graphic must meet the requirements of the organization and utilize specific features of GIMP.			1i, 5a, 5c, 7b, 7d

NOTE:. After HTML Lesson 6, various labs will have students create their own graphics for their website, so the Web Graphics Unit will be incorporated throughout the course.

GIMP may be downloaded and distributed freely from www.gimp.org. Unlike expensive software applications that most students, and teachers, will typically only have the opportunity to use at school, any student may download and install GIMP at home for their personal use thus expanding their opportunities to utilize what they learn in class.

The labs can be accessed by clicking on the **Labs & Projects** tab. Everything under this tab can be electronically assigned to your classes or printed if you choose.



Unit 3: Basic HTML5 with CSS

Lesson	Topics Covered	Exercise	TEKS (Texas Only)
This unit will introduce students to the basics of creating web pages using HTML5 and CSS3. Students will learn to construct basic websites that include multiple pages, images, and links. Students will also learn how layout content and page elements. Students should have a basic text editor installed as well as a variety of browsers to work with.			
Lesson 1	HTML Tags & Page Structure: Students will be introduced to what HTML and CSS is. They will learn the basic tags, inline vs. block tags, and how to structure a web page. The hexadecimal color code system will be introduced and how to apply background and text colors to elements. Students will also be introduced to special characters. The inline style sheets will be introduced in this lesson.	Lesson 1 Worksheet Guided Practice Lab 1-1, Lab 1-2 Lab 1-3, Lab 1-4 Lab 1-5, Lab 1-6 Lesson 1 Error Detection Challenge Lab 1	7c, 8a, 8b, 8c
Lesson 2	Creating Lists: Students will learn how to create the ordered, unordered, and definition lists. They will also learn how to customize the lists and modify the bullet types, numbering system, and starting value of the ordered list. Embedding style sheets will also be introduced in defining styles for the tag.	Lesson 2 Worksheet Guided Practice Lab 2-1, Lab 2-2 Lab 2-3, Lab 2-4 Lab 2-5, Lab 2-6 Challenge Lab 2	7c, 8a, 8b, 8c
Lesson 3	Page Layout Design: Students will learn how to align text, and how to float elements to achieve a better page layout with text wrapping. They will also learn how to size container elements and how overflow content can be handled. Students will also learn about the parent/child container concept.	Lesson 3 Worksheet Guided Practice Lab 3-1, Lab 3-2 Lab 3-3, Lab 3-4 Challenge Lab 3	7c, 8a, 8b, 8c
Lesson 4	Text & Font Styles: Students will learn how to select fonts for their web pages. They will learn about the various font styles, Sans-Serif and Serif fonts. They will also learn about the various font and text style properties. The span tag will also be introduced and pseudo-element styles as well.	Lesson 4 Worksheet Guided Practice Lab 4-1, Lab 4-2 Lab 4-3, Lab 4-4 Challenge Lab 4	7c, 8a, 8b, 8c
Lesson 5	Site Structure & Links: The various website structures will be introduced in this lesson. Students will also learn how to add hyperlinks to their web pages to create page jumps, links to other pages within their site, and how to link to other websites. Students will also learn how to customize their link properties. External style sheets will be introduced in this lesson.	Lesson 5 Worksheet Guided Practice Lab 5-1, Lab 5-2 Lab 5-3, Lab 5-4 Lab 5-5, Lab 5-6 Challenge Lab 5	7c, 8a, 8b, 8c
Design Portfolio Project 1: This first project will allow students to plan and develop a multi-level website on inspirational people utilizing the basic concepts introduced in the first five lessons of Unit 3. Students are given a general storyboard to follow with design expectations. They must select their layout and plan their design, and color scheme to be used as well as research the content for their website.			1i, 7c, 8a, 8b, 8c
Lesson 6	Working with Images: This lesson will teach students how to insert images onto their webpage. Students will learn how to insert a basic image, and how to float it with content, use images as links. Students will also learn how to insert an image as a background to an element and to control its placement. Using images as bullets in lists is also covered.	Lesson 6 Worksheet Guided Practice Lab 6-1 Lab 6-2 Lab 6-3 Lab 6-4 Lab 6-5 Lab 6-6 Challenge Lab 6	5b, 7c, 8a, 8b, 8c
Lesson 7	Custom Margins & Borders: Students will learn how to apply margins, center elements using auto margins, create custom borders around an element. Students will also learn how to set the border radius to create rounded corners on elements.	Lesson 7 Worksheet Guided Practice Lab 7-1 Lab 7-2 Lab 7-3 Lab 7-4 Challenge Lab 7	5b, 7c, 8a, 8b, 8c
Lesson 8	Creating Basic Tables: Students will learn how to create tables on their webpage for displaying data. Students will learn how to position their tables on their pages and customize the table's appearance.	Lesson 8 Worksheet Guided Practice Lab 8-1, Lab 8-2 Lab 8-3, Lab 8-4 Challenge Lab 8	5b, 7c, 8a, 8b, 8c
Design Portfolio Project 2: The second project will allow students to a full web site on their own using the concepts introduced in Unit 3. Students will design an autobiography website about themselves and they will be provided a variety of page topics with which they can choose from. They are to then create a story board of their website's structure and then plan their sites content, layout, design, and color scheme while following the project design requirements and expectations.			1i, 5b, 7c, 8a, 8b, 8c

Unit 4: Advanced HTML Design

Lesson	Topics Covered	Exercises	TEKS (Texas Only)
Lesson 1	CSS Class & IDs: Students will learn how classes are and how to apply them, as well as the benefits to using classes. Students will also learn about IDs, and how and when they are applied to their web documents.	Lesson 1 Worksheet Guided Practice Lab 1-1, Lab 1-2 Lab 1-3, Lab 1-4, Lab 1-5	5b, 7c, 8a, 8b, 8c
Lesson 2	Color Design: This lesson will teach students how to take control over the color presentation on their web sites. They will learn about the RGB color system, how to set transparent background colors, and how to set gradient backgrounds to their elements.	Lesson 2 Worksheet Guided Practice Lab 2-1, Lab 2-2 Lab 2-3, Lab 2-4	5b, 7c, 8a, 8b, 8c, 8d
Lesson 3	Element Positioning with CSS: Students will learn how to control the layout and positioning of their elements using style sheets. Students will learn about absolute and relative positioning of and setting the left, right, and top offset to define specific a specific placement of their content.	Lesson 3 Worksheet Guided Practice Lab 3-1, Lab 3-2 Lab 3-3, Lab 3-4 Lab 3-5	5b, 7c, 8a, 8b, 8c, 8d
Lesson 4	Merging Table Cells: Advanced data table design techniques will be introduced. Students will learn to merge table cells across columns and rows using colspan and rowspan.	Lesson 4 Worksheet Guided Practice Lab 4-1, Lab 4-2 Lab 4-3, Lab 4-4	5b, 7c, 8a, 8b, 8c
Design Portfolio Project 3: The second project will focus on developing a quality tutorial website on how to do something according to specific guidelines. The focus on CSS Classes, IDs and page layout will also be emphasized using the absolute and relative positioning techniques. Advanced color application, such as gradients will also be required. Students will plan their topic, page, and site design.			1i, 5b, 7c, 8a, 8b, 8c, 8d
Lesson 5	Styling Navigation Bars: This lesson will teach students how to convert an inline element into a block element. Students will also learn how to create custom horizontal and vertical navigation bars from ordinary links.	Lesson 5 Worksheet Guided Practice Lab 5-1, Lab 5-2 Lab 5-3, Lab 5-4	5b, 7c, 8a, 8b, 8c, 8d
Lesson 6	Embedding Media: Students will be introduced to the audio and video elements with THML5. Students will also learn about the various types of media files and browser limitations, and how to embed audio and video files into their web pages.	Lesson 6 Worksheet Guided Practice Lab 6-1, Lab 6-2 Lab 6-3, Lab 6-4	5b, 7c, 8a, 8b, 8c, 8d
Lesson 7	Transforming and Transitioning Elements: This lesson will show students how to modify an elements shape and placement. Students will learn how to rotate elements on the page, how to skew elements horizontally and vertically, and how to scale an element. Students will also learn how to animate the transition from one form to another.	Lesson 7 Worksheet Guided Practice Lab 7-1, Lab 7-2 Lab 7-3, Lab 7-4	5b, 7c, 8a, 8b, 8c, 8d, 9e
Lesson 8	Filter Effects: Students will learn about the filters available in CSS 3 and how to apply them to modify and/or distort their page elements.. Alternatives to using filters are also discussed when available.	Lesson 8 Worksheet Guided Practice Lab 8-1, Lab 8-2 Lab 8-3, Lab 8-4	5b, 7c, 8a, 8b, 8c, 8d
Design Portfolio Project 4: The third project will bring together all the design elements and techniques introduced in Units 3 and 4 with a focus on designing navigation bars, media, and applying effects from lessons 6, 7, and 9 into their site. Students will develop a travel website about a country while adhering to specific guidelines. They will be required to plan the site and research specific information about their assigned country.			1i, 5b, 7c, 8a, 8b, 8c

Unit 5: Dreamweaver (NOTE: This unit is optional)

Dreamweaver CS5 & CS6 with HTML5			
Lesson	Topics Covered	Exercise	TEKS (Texas Only)
The Dreamweaver CS6 lessons are based on the HTML5 coding standards. It is possible to use previous versions of Dreamweaver with the CS 6 lessons, but there will be some differences in screen shots and procedures to achieve the indicated result. Students should have completed Unit 3 prior to starting Unit 5.			
Lesson 1	Working with Dreamweaver: Students will be introduced to the Dreamweaver working environment and how to open and edit web documents. Students will also learn what a site profile is and how to setup site profiles in Dreamweaver.	Lesson 1 Worksheet	5c, 8c
Lesson 2	Web Documents: Students will learn how to create and edit web documents in Dreamweaver. Students will work in Code View and learn to integrate HTML coding skills with Dreamweaver.	Guided Practice Lab 2-1 Lab 2-2	5c, 8c
Lesson 3	Image Navigation Features: In this lesson, students will learn to create image maps, image rollovers, and how to apply these features to their web page.	Guided Practice Lab 3-1 Lab 3-2	5c, 8c
Lesson 4	Using Templates: Students will learn to use the built-in templates in Dreamweaver to quickly create HTML5 layouts for their websites.	Guided Practice Lab 4-1 Lab 4-2	5c, 8c
Lesson 5	Spry Widgets: Students will learn to create and customize the Spry Menu Bar, Tabbed Panel, Accordion, and Collapsible Panel.	Guided Practice Lab 5-1 Lab 5-2	5c, 8c
Lesson 6	Automated Style Sheets: Students will learn to use the Dreamweaver Style Sheet tools for creating Embedded and External Style Sheets and how to create and edit style rules.	Guided Practice Lab 6-1 Lab 6-2	5c, 8c
Design Portfolio Project 5: After Dreamweaver Lesson 6 is completed, Project 5 should be assigned. Students will plan and develop a business website on a fictional company. They will be provided with specific requirements for the site and they must plan the page and site design, as well as determine the information the target audience will most likely be seeing from the website. Design concepts will focus on the design features available in Dreamweaver.			1i, 5a, 5b, 5c, 5d, 7a, 8c, 12a

NOTE: The Dreamweaver CS6 lessons can also be used with CS5, however there are some minor interface differences that the instructor should review prior to teaching the unit.

This is an optional unit. It is not necessary to complete this unit prior to moving on to Unit 6.

Unit 6: JavaScript

Lesson	Topics Covered	Exercise	TEKS (Texas Only)
The JavaScript focus will teach general programming concepts, yet keeping the design emphasis. Students will learn to use JavaScript as a tool for creating attractive and efficiently designed web sites. Students should have completed Unit 3 prior to starting Unit 6.			
Lesson 1	Program Development: Students will be introduced to basic programming concepts, including the evolution of programming languages, program planning, algorithms, and program planning	Lesson1 Crossword Guided Practice Lesson 1 Worksheet Algorithm Worksheet	8a, 9c, 9f
Lesson 2	The Creating Forms: Students will learn to use and apply the various form elements. Students will create working forms that send data to live CGI scripts. Students will also learn to modify form elements appearances by using style sheets.	Lab 2-1 Lab 2-2 Lab 2-3 Lab 2-4 Lab 2-5 Lab 2-6	5c, 8c, 9c, 9e, 9f, 9g
Lesson 3	Beginning Javascript: Students will be introduced to the JavaScript programming language as well as the object oriented programming concept.	Lesson 3 Worksheet Lab 3-1 Lab 3-2	5c, 8c, 9c, 9d, 9e, 9f
Lesson 4	Variables & Functions: Students will be introduced to variables and how they are used to store data and how to process and output variable values. Functions will also be introduced. Students will learn to create and call functions within a web document.	Lesson 4 Worksheet Lab 4-1 Lab 4-2 Lab 4-3 Lab 4-4 Lab 4-5	5c, 8c, 9c, 9e, 9f
Lesson 5	Processing Data: Students will create functions to receive , store, and process information entered into a web form. Students will learn how to pass data to a function and how to retrieve data from a form. The math objects methods will also be used to with processing forms.	Lab 5-1 Lab 5-2 Lab 5-3 Lab 5-4	5c, 8c, 9c, 9d, 9e, 9f
Design Portfolio Project 6: Students will develop an data collection interface for an online business. Students will be given guidelines in which they must develop a web interface for collecting data from a client and processing the data using JavaScript and generating an output for the client.			1a, 1b, 1c, 1d, 1e, 1f, 11a, 11b, 11c, 11d, 11e, 11f, 12a, 12b, 12c, 12d
Lesson 6	Custom Windows: Students will explore concept of objects in programming and work with the window objects and the various window properties.	Lab 6-1 Lab 6-2	5c, 8c, 9c, 9e, 9f
Lesson 7	JavaScript Arrays: Student will be introduced to data structures and will learn how to created arrays in JavaScript. Students will be able to access specific elements of the array and output information from an array.	Lab 7-1 Lab 7-2 Lab 7-3 Lab 7-4	5c, 8c, 9c, 9e, 9f
Lesson 8	Control Structures: Students will be introduced to comparison operators and logical operators, and to control program flow using the while, do/while, and for loops. Students will also learn the various selection statements, including the if and if/else statements are used to make decisions.	Lesson 8-A Wks Lab 8-1 Lab 8-2 Lesson 8-B Wks Lab 8-3 Lab 8-4 Lab 8-5 Lab 8-6	5c, 8c, 9c, 9e, 9f
Lesson 9	Canvas Graphics: Students will learn the HTML 5 Canvas element and how to use the canvas methods to draw lines, squares, circles, and polygons, as well as how to fill and stroke the various shapes.	Lab 9-1 Lab 9-2 Lab 9-3	5c, 8c, 9c, 9e, 9f
Design Portfolio Project 7 (Team Project): Students should be divided into groups of 2 or 3 for this project. Project 6 will focus on going through the entire website design process from determining client requirements for a website, planning the site design and creating a storyboard, developing all graphics, and web pages. Emphasis should be on using JavaScript as a design tool for creating efficient and dynamic web pages.			1a, 1b, 1c, 1d, 1e, 1f, 11a, 11b, 11c, 11d, 11e, 11f, 12a, 12b, 12c, 12d

Unit 7: PHP / MySQL Scripting

Lesson	Topics Covered	Exercise	TEKS (Texas Only)
The PHP lessons will introduce students to web design concepts using PHP, including form processing, user management, and expand on the concepts of dynamic and database driven web sites. Students should have completed Unit 3 prior to starting Unit 7.			
Lesson 1	Getting Started with PHP: Students will be introduced to PHP scripting style and structure, on how PHP code is processed, and how it interacts with HTML.	Lesson 1 Worksheet Lab 1-1 Lab 1-2	5c, 8c, 9e, 9f, 9g
Lesson 2	Variables & Predefined Functions: PHP style variables will be introduced and students will learn how to create and use variables in web documents using PHP. Students will also learn how to use the predefined functions in PHP.	Lesson 2 Worksheet Lab 2-1 Lab 2-2 Lab 2-3	5c, 8c, 9e, 9f, 9g
Lesson 3	User Defined Functions: Students will learn to create their own functions and how to execute them. They will also learn practical methods for using functions in web page construction.	Lesson 3 Worksheet Lab 3-1 Lab 3-2	5c, 8c, 9e, 9f, 9g
Lesson 4	Program Control: Students will be introduced to superglobal variables and how they are used in programs, as well selection statements, comparison operators, and logical operators.	Lab 4-1 Lab 4-2 Lab 4-3	5c, 8c, 9e, 9f, 9g
Lesson 5	Repetition Statements: Students will learn how the <i>for</i> , <i>while</i> , and <i>do-while</i> , loop is used in PHP.	Lab 5-1 Lab 5-2 Lab 5-3 Lab 5-4	5c, 8c, 9e, 9f, 9g
Lesson 6	Form Processing & Data Files: Students will learn to pass form information to a PHP script and how to process the data and generate an output.. Students will also learn how to create, retrieve, and edit data files in PHP Scripting.	Lab 6-1 Lab 6-2	5c, 8c, 9e, 9f, 9g
Lesson 7	MySQLi Databases / Storing Data: Students will learn how to create databases, insert, update, delete, and select data from a database table. Students will also learn how to use the data stored in a MySQLi database in web page construction. This lesson will introduce the MySQLi (improved) version.	Lab 7-1 Lab 7-2	5c, 8c, 9e, 9f, 9g
Lesson 8	Arrays & Strings: Students will review the array data structures that was introduced in JavaScript and also will learn about the various string methods and how to create and manage substrings.	Lab 8-1 Lab 8-2	5c, 8c, 9e, 9f, 9g
Lesson 9	Sessions and Cookies: Students will learn how to create and manage sessions and cookies. Students will also learn how sessions and cookies are used in visitor management.	Lab 9-1 Lab 9-2	5c, 8c, 9e, 9f, 9g
Design Portfolio Project 8: At the completion of the PHP lessons, students will design a database driven Content Management System utilizing session security techniques, and MySQLi databases.			5a, 5c, 8c, 9e, 9f, 9g, 12a

WAMP Server is a free application that allows you to run php scripts. When you install WAMP Server it will install and configure all necessary software to teach the PHP / MySQL Labs on a Windows based system. Because WAMP Server is the most popular application among developers for creating local web servers for running PHP, it is the application we will be referencing in the lessons and labs.

WAMP Server for Windows can be downloaded from <http://www.wampserver.com/en>

MAMP Server for Mac can be downloaded from <http://www.mamp.info/en/>

Upon completion of the course, teachers are strongly encouraged to give their students the opportunity to take the **Web Design Certification Exam** through WD Certified which is provided free to IE Class subscribers.