# HTML5 Course Outline

## Lesson 1: Defining HTML5

***Learning Objectives:*** *In this lesson, students learn the features and capabilities that are part of the HTML5 specification and related technologies. Students will be able to understand the difference between HTML5 syntax and HTML 4.0 and/or XHTML 1.0 syntax. Additionally, students will be able to identify the key features of HTML5, including the new HTML5 elements, multimedia elements, the Canvas element, web forms and more. Another objective is that students have the ability to distinguish between the features that are technically part of the HTML5 specification and those that are related technologies; such as Geolocation, Drag and Drop and CSS3.*

* The benefits of HTML5
* Key features
  + New markup and layout elements
  + The **<video>**, **<audio>**, and **<canvas>** elements
  + Web forms
  + Revised elements based on HTML 4.0
* An overview of HTML5 APIs and supporting technologies
  + Geolocation
  + Web Workers
  + Web storage
  + CSS3 animations and transitions
  + CSS3 backgrounds, borders, RGBa colors, gradients, drop shadows, and rounded corners
  + **@font-face** web fonts 25
* HTML5 is still a work in progress
  + Browser Support
  + Where HTML5 is being used today

## Lesson 2: Fundamentals of HTML, XHTML, and CSS

***Learning Objectives:*** *In this lesson, students learn the fundamentals of HTML, XHTML and CSS in order to understand the foundations of creating the style and structure of their web pages. Students learn how to use document types (DOCTYPE) to help them validate their web pages and for use as a troubleshooting tool. Additionally, students build a simple web page in order to understand how to add images, create hyperlinks and work with both internal and external style sheets.*

* An overview of HTML syntax
  + The details of XHTML syntax
* The role of the DOCTYPE
  + The W3C and page validation
* Creating an HTML page
  + Defining HTML elements
  + Placing images in HTML
  + Using attributes
  + Creating hyperlinks
* The role of Cascading Style Sheets (CSS)
  + Styling a heading
  + Understanding class styles and the **<span>** element
* Three ways to use styles
  + Internal
  + External
  + Inline
* When to use internal versus external style sheets
* Creating an external style sheet
* Understanding the “cascade” of CSS

## Lesson 3: Introduction to CSS Layout

***Learning Objectives:*** *In this lesson, students learn the fundamentals of creating a two column, fixed-width layout using HTML and CSS. Students learn the function of a CSS “reset” file and how to add it to their pages. The core concepts of CSS layout are covered in this lesson. This includes the use of the <div> element, as well as the CSS float and clear properties, to create columns on the page.*

* The role of a CSS reset file
  + Adding a link to an external reset style sheet
* A brief history of layout techniques on the web
  + An overview of page layout options
* Creating the foundations of a two-column, fixed-width CSS layout
  + The role of the div element
  + Pairing CSS IDs and classes with div elements
* Understanding the CSS **float** property
  + Creating columns with the **float** property
* Working with the **clear** property
* Creating a list-based navigation using floats
* Using margins and padding to control the appearance of your layout
* CSS background images
  + Styling your footer with a background image

## Lesson 4: Using HTML5 Markup

***Learning Objectives:*** *In this lesson, students learn how to use the new HTML5 elements for layout purposes. All of the major new sectioning elements are covered as well as a review of HTML 4 tags that have been revised for HTML5. Students will learn how to convert a pre-existing web page that uses HTML 4 elements into an HTML5 page by replacing <div> elements with the new HTML5 elements. Additionally, working with HTML5 form elements and adding multimedia with the HTML5 video and audio elements is covered.*

* Reviewing semantic markup
* HTML5 fundamentals
  + Using the HTML5 DOCTYPE declaration
* The different categories used for HTML5 content
  + Metadata content
  + Flow content
  + Sectioning content
  + Heading content
  + Phrasing content
  + Embedded content
  + Interactive content
* Using the new **<header>** element in HTML5
  + Adding support for HTML5 elements in browsers 144
* Adding the HTML5 **<nav>** elements
* The role of HTML5 document outlines
* Adding the other HTML5 sectioning elements
  + Adding the **<section>** element
  + Adding the **<article>** element
  + Adding the **<aside>** element
  + Adding the **<footer>** element
* Additional HTML5 elements
  + The **<figure>** element
  + The **<figcaption>** element
  + The **<time>** element
* HTML 4.0 elements revisited
  + The **<b>** tag versus the **<strong>** tag
  + The **<i>** tag versus the **<emphasis>** tag
* Working with HTML5 forms
  + Adding the **email** and **url** input types
  + Adding the **required** and **placeholder** attributes
  + Adding the **autofocus** and **autocomplete** attributes
* Working with Video & Audio Elements
  + Using the **<video>** element and its related attributes
  + Using the **<audio>** element and its related attributes
  + Video & Audio codec issues to consider when adding multimedia

## Lesson 5: Working with Canvas

***Learning Objectives:*** *In this lesson, students learn about* *Canvas, the two-dimensional drawing API included with the HTML5 specification. Students will learn how to create artwork on a web page, including adding shapes, text, fill and stroke colors, gradients, images and basic animations using JavaScript. This lesson also introduces students to the fundamentals of interactivity with JavaScript.*

* The role of JavaScript in HTML5 applications
* JavaScript basics
  + JavaScript events
  + Placing your JavaScript into an external document
  + The Document Object Model
* Understanding the Canvas element
  + The benefits of the Canvas element
* Creating Artwork with Canvas
  + Drawing paths
  + Drawing rectangles
  + Drawing lines and circles
  + Drawing with curves
* Adding text
* Using colors, styles, and gradients
* Adding images
* Creating a graph in Canvas
  + Working with data arrays
* Creating animations with Canvas and Animation
  + Using transforms
  + Creating a drawing loop

## Lesson 6: HTML5 Drag and Drop

***Learning Objectives:*** *In this lesson, students learn how to use Drag and Drop, an API related to the HTML5 specification. Specifically, students will learn how to create a basic shopping cart interface using drag and drop objects.*

* The different forms of Drag and Drop on the web
  + The benefits of Drag and Drop
* Cross-Browser Drag and Drop
  + Understanding the role of the **preventDefault** function
  + Adding the **dragenter** and **dragover** events
  + Making any object **draggable** in HTML5
  + Adding the **ondragstart** attribute
  + Creating the **dragStarted** function
  + Adding Cross-browser compatibility
* Transferring Data with a Drag-and-Drop Operation
  + Using the **dataTransfer** object
  + Working with the **setData** function
  + Understanding the **innerHTML** property

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