# **HTML and CSS**

# **Tutorial One: Getting Started with HTML 5**

# **A Guide to this Instructor’s Manual:**

We have designed this Instructor’s Manual to supplement and enhance your teaching experience through classroom activities and a cohesive chapter summary.

This document is organized chronologically, using the same heading in **blue** that you see in the textbook. Under each heading you will find (in order): Lecture Notes that summarize the section, Figures and Boxes found in the section (if any), Teacher Tips, Classroom Activities, and Lab Activities. Pay special attention to teaching tips, and activities geared towards quizzing your students, enhancing their critical thinking skills, and encouraging experimentation within the software.

In addition to this Instructor’s Manual, our Instructor’s Resources CD also contains PowerPoint Presentations, Test Banks, and other supplements to aid in your teaching experience.

**For your students:**

Our latest online feature, CourseCasts, is a library of weekly podcasts designed to keep your students up-to-date with the latest in technology news. Direct your students to <http://coursecasts.course.com>, where they can download the most recent CourseCast onto their mp3 player. Ken Baldauf, host of CourseCasts, is a faculty member of the Florida State University Computer Science Department, where he is responsible for teaching technology classes to thousands of FSU students each year. Ken is an expert in the latest technology and sorts through and aggregates the most pertinent news and information for CourseCasts so your students can spend their time enjoying technology, rather than trying to figure it out. Open or close your lecture with a discussion based on the latest CourseCast.

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**Tutorial Objectives**

Students will have mastered the material in Tutorial One when they can:

Session 1.1

* Explore the history of the Internet, the Web, and HTML
* Compare the different versions of HTML
* Study the syntax of HTML tags and attributes
* Define a Web page head, body, and title
* Work with the HTML5 structural elements

Session 1.2

* Mark page headings, paragraphs, block quotes, and addresses
* Create unordered and ordered lists
* Apply an external style sheet to a Web page
* Run a JavaScript program
* Mark text-level elements including strong and emphasized text
* Insert inline images and line breaks
* Insert special characters from extended character sets

**Exploring the History of the World Wide Web**

LECTURE NOTES

* Describe the function of a network, a server, and a client.
* Discuss the differences between a LAN and a WAN.
* Define the Internet and describe the multiple types of devices that make up the Internet today.
* Discuss the reasons and the people involved in the creation of the Internet.
* Explain the concept of linking Web pages together and the use of Hypertext.
* Describe the function of a Web server and a browser.
* Discuss the various types of Web browsers.

BOXES

* None

FIGURES

* None

TEACHER TIP

Explain to the students that anything they put onto a Web page and store on a Web server is viewable not just by their family and friends but by people all over the world. It is important for them to understand the consequences of placing too much private information on the Web.

CLASSROOM ACTIVITIES

* Class Discussion: Ask the students which Web browser they prefer to use and what features they like. Have the students use any search engine to look for other Web browsers. Suggest that they try different ones available to them for free such as Safari, Internet Explorer, and Firefox.
* Class Discussion: Have the students use a search engine to find information on privacy issues related to young people putting too much information on the Internet. Then have them create a list of do’s and don’ts about privacy.

**Introducing HTML**

LECTURE NOTES

* Explain what a markup language is and how they are used.
* Define HTML and its relationship to tagging.
* Explain how the appearance of a Web page is controlled using styles.
* Discuss the history of HTML and its relationship to SGML.
* Explain what the W3C is and how they design and manage Web page standards.
* Discuss the progression of the original HTML to HTML5, including XHTML and XML.
* Explain what a deprecated feature is.
* Discuss the different tools and applications used for creating HTML documents and managing Web sites.

BOXES

* None

FIGURES

* Figure 1-1

TEACHER TIP

Emphasize that HTML is not a programming language. Help students to understand that it is quite different and simple to learn. Explain to students the differences between the XML, HTML, and XHTML. When developing or working with Web pages on the Internet, they will encounter pages created in the various versions.

CLASSROOM ACTIVITIES

* Student Discussion: Lead the class in a discussion of what features they like and dislike on the Web sites they visit regularly. Then have them relate those features to the version of HTML that provides those features.

**Entering Elements and Attributes**

LECTURE NOTES

* Define elements and tags and explain their difference.
* Explain a two-sided, an opening tag, and a closing tag.
* Discuss attributes and their use.
* Define white space and explain how the browser renders it.
* Define syntax.

BOXES

* Tip: Attributes can be listed in any order, but they must be separated from one another by a blank space and enclosed within single or double quotation marks. (HTML 9)
* Reference: Adding an Attribute to an Element (HTML 9)
* Insight: HTML5 and XHTML Syntax (HTML 10)

FIGURES

* None

TEACHER TIP

Discuss with the students the need to follow the correct syntax when creating their Web pages. Some browsers are very forgiving in their interpretation of the HTML code and will often ignore syntax errors. Therefore, if the author is not diligent in following the syntax, their pages may appear correctly in some browsers, while being rendered incorrectly in others.

CLASSROOM ACTIVITIES

* Class Demonstration: If you have a computer and an Internet connection in the classroom show the students the how they can use the browser to view the HTML code for the Web sites they visit. Some sites are very complex and others are very simple. Tell them not to be intimidated by the complex sites.
* Class Discussion: Have the students go to their favorite Web site and look at the HTML code. Then discuss any methods the Web sites may use to try and obscure their code. Ask the student why they think an author would want to hide their code.

**Exploring the Structure of an HTML Document**

LECTURE NOTES

* Discuss the html, head, and body elements.
* Explain the use of doctype and how validators use it.
* Describe the effect of standards mode and quirks mode on the appearance of a Web page.
* Discuss the differences between the format of the HTML, XHTML, and HTML5 doctypes.

BOXES

* Tip: Unless you are working with a legacy page that absolutely needs to be compatible with old browsers from the 1990s, you should always include a doctype and put your browser in standards mode. (HTML 12)
* Reference: Creating the Basic Structure of an HTML Document (HTML 12)
* Tip: To make it easier to link to your Web pages, follow the Internet convention of naming HTML files and folders using only lowercase letters with no spaces. (HTML 13)

FIGURES

* Figure 1-2, Figure 1-3

TEACHER TIP

Explain to the students that performing each lab will be the best way for them to see how the HTML controls the layout and formatting of a Web page. Simply reading the textbook will not give them the experience to identify their mistakes when they happen.

CLASSROOM ACTIVITIES

* Class Discussion: Discuss with the students the differences between a word processor, a text editor, and a Web development package. Explain the impact of using a word processor to write HTML code and the impact it has on a Web browser.
* Class Demonstration: Download and install several open-source HTML editors and demonstrate to the students that it is not necessary to purchase an expensive software package. An excellent development system can be had for free.

LAB ACTIVITY

* Student Lab: Have the students use an editor of their choice and create the HTML file as outlined on page HTML 12 of the textbook: “To create the basic structure of an HTML document.”

**Marking the Head Element**

LECTURE NOTES

* Explain the function of the head element.
* Discuss the importance of including a page title and explain how the search engines use it.
* Explain the comment tag and the importance of including comments in HTML documents.
* Discuss the advantages of viewing your HTML documents in a Web browser as you create them.
* Demonstrate that an HTML file can render slightly differently in different browsers.

BOXES

* Tip: Indent your markup tags and insert extra blank spaces as shown in this book to make your code easier to read. These indentations and spaces do not affect how the page is rendered by browsers. (HTML 14)
* Reference: Adding an HTML Comment (HTML 14)
* Insight: Converting an HTML Document into XHTML. (HTML 16)

FIGURES

* Figure 1-4, Figure 1-5, Figure 1-6

TEACHER TIP

Remind students that headings are interpreted by the browsers and are not set formatting tools. Also stress the importance of understanding whitespace. Students often forget that browsers ignore spaces, tabs, and line breaks.

CLASSROOM ACTIVITIES

* Class Discussion: Have the students look at the code for several Web sites and discuss the quality of comments in the code. Ask questions about the comments to see if the students can decipher the intent of the comments. Were the comments describing the function of the code? Were there reminders to the author to fix or complete any sections of the page? Was a page description included in the comments?
* Group Project: Break the class into several small groups and have them work together to design a page comment header containing such things as the authors name, date the page was created, revision history of the page, and any other information they feel would be important.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from the section, “To add a comment to the document head” on page 15.
* Complete the lab assignment on page HTML 15 titled, “To view Dave’s Web page:.”

**Defining the Structure of the Page Body**

LECTURE NOTES

* Describe to the students the benefit of planning the Web site and Web pages before starting to generate the HTML code.
* Demonstrate diagraming a Web page. Use Figure 1-8 as an example.
* Reference the table in Figure 1-9 and explain the function of each structural element.
* Discuss the use of nested elements.
* Describe the difference between HTML5 structural elements and the <div> tag.
* Reference Figure 1-12 and explain the use of the <div> tag.

BOXES

* Reference: Marking Structural Elements in HTML5 (HTML 19)
* Proskills: Written Communication: Writing Effective HTML Code (HTML 22)

FIGURES

* Figure 1-7, Figure 1-8, Figure 1-9, Figure 1-10, Figure 1-11, Figure 1-12

TEACHER TIP

There are several common Web page formats used. Research these formats and then diagram them on the white/chalk board for the students.

CLASSROOM ACTIVITIES

* Class Discussion: Discuss the contents of the Proskills box on page HTML 22.
* Section Review: Discuss the questions in the Review section titled Session 1.1 Quick Check on page HTML 23.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from the section “To insert the HTML5 structural elements” on page 19.
* Complete the lab assignment on page HTML 20 titled, “To add three article elements.”

**Working with Grouping Elements**

LECTURE NOTES

* Define grouping elements as those elements used to contain the content that is viewed as a distinct block within a Web page.
* Discuss the grouping elements listed in Figure 1-13 and how they are used.
* Discuss the use of headers and the heading element (h1 through h6).
* Describe how the hgroup element is used to establish titles and subtitles of a section of a Web page.
* Explain the use of the Paragraph element and tag.
* Explain use of the block quote element.
* Explain use of the address element.

BOXES

* Reference: Marking Grouping Content (HTML 27)
* Tip: The hgroup element can contain only h1 through h6 elements or other hgroup elements. (HTML 30)

FIGURES

* Figure 1-13, Figure 1-14, Figure 1-15, Figure 1-16, Figure 1-17, Figure 1-18, Figure 1-19, Figure 1-20, Figure 1-21, Figure 1-22, Figure 1-23

TEACHER TIP

Students will understand how to use tags better by seeing them used. Try to have multiple sample pages showing each of the tags in use.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 26 “To open the HTML Tags demo page”
  + HTML 27 “To view heading elements”
  + HTML 28 “To add headings to Dave’s document”
  + HTML 30 “To group the first two headings in the document”
  + HTML 30 “To add four paragraphs to Dave’s Web page”
  + HTML 32 “To create the customer comment block quotes”
  + HTML 34 “To add the J-Prop Shop address”

**Marking a List**

LECTURE NOTES

* Discuss the need for and use of lists. Also explain the three types of lisst that can be created in HTML.
* Describe the use of ordered and unordered lists and their tags.
* Describe the implementation of nested lists.
* Explain the use of the description lists.

BOXES

* Reference: Marking Lists (HTML 35)
* Tip: Description lists can also mark dialog, with each dt element naming a speaker, and each dd element containing the speaker’s words. (HTML 39)

FIGURES

* Figure 1-24, Figure 1-25, Figure 1-26, Figure 1-27, Figure 1-28, Figure 1-29

TEACHER TIP

Students will find it useful to see a demonstration page of the different list types. Show examples of each list type and discuss situations where lists would be useful.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections
  + HTML 35 “To create an ordered list”
  + HTML 36 “To create an unordered list”
  + HTML 37 “To create a nested list”
  + HTML 38 “To create a description list”
  + HTML 39 “To add an unordered list to Dave’s Web page”

**Applying an External Style Sheet**

LECTURE NOTES

* Discuss the use of external style sheets and their advantages.
* Explain how an external style sheet is linked to a Web page.
* Discuss the format of the HTGML tag used to link an external style sheet to the Web page.
* Describe the use of the section, aside, and footer elements.
* Explain the use of JavaScript and the free script Moderizr by MIT.
* Discuss the differences in the way Internet Explorer 8 will render a Web page vs. IE9 and other modern browsers.

BOXES

* None

FIGURES

* Figure 1-30, Figure 1-31, Figure 1-32, Figure 1-33, Figure 1-34

TEACHER TIP

Because not all browser will render an HTML document the same, it is necessary to test your HTML code in multiple browsers. Reinforce this concept with the students and remind them that they should install and use a minimum of three browsers.

CLASSROOM ACTIVITIES

* Class Discussion: It is not always easy to view the external style sheets that other Web sites use to control the layout of their Web pages. Show the students how they can find the name and location of the .css file, then using that path and filename they can load the style sheet into their browser for viewing.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 41 “To apply Dave’s external style sheet”
  + HTML 44 “To link to the Modernizr file”

**Marking Text-Level Elements**

LECTURE NOTES

* Define the purpose and use of text-level elements.
* Reference Figure 1-35 while discussing the text-level elements listed in the table.
* Explain the nesting of text-level elements.
* Describe the purpose and use of the div and span elements.

BOXES

* Tip: Text-level elements should always be nested within grouping elements such as paragraphs or headings. (HTML 45)
* ProSkills: Written Communication: Logical and Physical Interpretation of Elements (HTML 48)
* Insight: Presentational Attributes (HTML 49)

FIGURES

* Figure 1-35, Figure 1-36, Figure 1-37, Figure 1-38

TEACHER TIP

There are a large number of text-level elements. Take the time to explain each of them to the class. But also ensure the students understand that it is not necessary to use every one of them. Sometimes they can be distracting, so they should be used with care.

CLASSROOM ACTIVITIES

* Class Discussion: Have the students find plain text Web pages, then ask them how they would dress the pages up using the tags from this lesson.
* Quick Quiz:
  1. Which text-level element is used to format a reference to a book or magazine article? (Answer: the cite tag)
  2. True/False: Computer code should be formatted using the code tag. (Answer: True)

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 46 “To explore the use of inline elements”
  + HTML 47 “To mark strong text”

**Making a Line Break**

LECTURE NOTES

* Discuss the use of line breaks and the br tag.
* Describe how the line break tag differs from the paragraph tag.

BOXES

* Insight: Marking a Horizontal Rule (HTML 51)

FIGURES

* Figure 1-39, Figure 1-40, Figure 1-41

CLASSROOM ACTIVITIES

* Class Discussion: In the past Web authors have often used the paragraph tag and the line break tag interchangeably. Discuss with the students why this is not correct and can cause formatting problems based upon which browser is being used to render the page.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 49 “To append customer names to the Customer Comments section”
  + HTML 51 “To insert line breaks in the comments”

**Inserting an Inline Image**

LECTURE NOTES

* Discuss the use of inline images in Web pages. Almost every Web page has at least one image.
* Describe the use of the img tag and the src and alt attributes. All other attributes are optional.
* Explain why the use of the width and height attributes is recommended.
* Explain the use of figures and the figure captions.
* Describe the HTML code contained on page HTML 54.

BOXES

* Tip: Always include alternate text for inline images. The alt attribute is required in XHTML code and is highly recommended as a way of accommodating users running nonvisual Web browsers. (HTML 52)

FIGURES

* Figure 1-42, Figure 1-43

TEACHER TIP

The use of figures and figure captions has not been this easy in past versions of HTML. Look for examples of how this technique was done in the past and compare the code. This is much simpler and faster to create.

CLASSROOM ACTIVITIES

* Class Discussion: Ask the student why they think the alt tag is required in XHTML. Then have them do a quick search on the Internet to see if they can find the reasoning behind it.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 52 “To insert the company logo at the top of the page”

**Working with Character Sets and Special Characters**

LECTURE NOTES

* Discuss with the students why special characters may be needed by a Web page.
* Define what a character set is and how many characters there are in the English language set vs. how many there may be in other sets, like Japanese or Chinese.
* Define ASCII and Unicode.
* Describe the numeric character reference and its usage.
* Explain what a character entity reference is and how it is used in comparison to a numeric character reference.
* Discuss how to create a special character and why you would need to do so if trying to display information about HTML itself.

BOXES

* Reference: Inserting Symbols from a Character Set (HTML 55)
* Insight: Special Characters (HTML 56)
* Tip: The meta element is also used to store information and keywords describing a document and its purpose. (HTML 59)
* ProSkills: Written Communication: Publishing Your Web Page (HTML 60)

FIGURES

* Figure 1-44, Figure 1-45, Figure 1-46, Figure 1-47

TEACHER TIP

Students will like the ability to get characters that they cannot get by normal typing. They will, however, have a hard time learning this. Stress that they may want keep the demo\_characters.htm page handy, as memorizing all of the codes would be a very daunting task.

CLASSROOM ACTIVITIES

* Class Discussion: Ask students to think of how many times they have used special characters when typing papers. Which ones do they feel they would use the most in their Web page? Why?
* Section Review: Discuss the questions in the Review section titled “Session 1.2 Quick Check”on page HTML 60.

LAB ACTIVITY

* Have the students use an editor of their choice to modify the file they created in the last lab. Follow the instructions from each of the following sections:
  + HTML 57 “To add bullets and an em-dash to Dave’s Web page”
  + HTML 59 “To specify the character encoding for Dave’s document”

**End of Tutorial Material**

* **Review Assignments:** Review Assignments provide students with additional practice of the skills they learned in the tutorial using the same tutorial case, with which they are already familiar.
* **Case Problems:** A typical NP tutorial has four Case Problems following the Review Assignments. Short tutorials can have fewer Case Problems (or none at all); other tutorials may have five Case Problems. The Case Problems provide further hands-on assessment of the skills and topics presented in the tutorial, but with new case scenarios. There are four types of Case Problems:
* **Apply**. In this type of Case Problem, students apply the skills that they have learned in the tutorial to solve a problem.
* **Create**. In a Create Case Problem, students are either shown the end result, such as a finished Web site, and asked to create the document based on the figure provided, or students are asked to create something from scratch in a more free-form manner.
* **Challenge**. A Challenge Case Problem involves three or more Explore steps. These steps challenge students by having them go beyond what was covered in the tutorial, either with guidance in the step or by using online Help as directed.
* **Research**. In this type of Case Problem, students need to go to the Web to find information that they will incorporate somehow in their work for the Case Problem.
* **ProSkills Exercises:** This feature is new for Office 2010 and Windows 7. ProSkills exercises integrate the technology skills students learn with one or more of the following soft skills: decision making, problem solving, teamwork, verbal communication, and written communication. The goal of these exercises is to enhance students’ understanding of the soft skills and how to apply them appropriately in real-world, professional situations that also involve software application skills. ProSkills exercises are offered at various points throughout a text, encompassing the concepts and skills presented in a standalone tutorial or a group of related tutorials.

**Glossary of Key Terms**

* address element (HTML 24)
* &bull; entity (HTML 24)
* article (HTML 2)
* ASCII (HTML 54)
* aside element (HTML 3)
* attributes (HTML 9)
* blockquote element (HTML 25)
* body (HTML 2)
* character encoding (HTML 55)
* character entity reference (HTML 55)
* character set (HTML 54)
* cite element (HTML 25)
* client (HTML 4)
* client-server network (HTML 4)
* closing tag (HTML 8)
* comments (HTML 2)
* comment tag (HTML 14)
* deprecated (HTML 5)
* description list (HTML 38)
* doctype (HTML 11)
* doctype switching (HTML 11)
* Document Type Declaration (HTML 11)
* elements (HTML 8)
* empty element (HTML 9)
* Extensible Hypertext Markup Language (HTML 6)
* Extensible Markup Language (HTML 6)
* file server (HTML 4)
* grouping elements (HTML 26)
* footer element (HTML 3)
* h2 element (HTML 24)
* hgroup element (HTML 25)
* head (HTML 2)
* header element (HTML 10)
* heading element (HTML 26)
* host (HTML 4)
* HTML (HTML 5)
* HTML 5.0 (HTML 6)
* hypertext (HTML 4)
* Hypertext Markup Language (HTML 5)
* img element (HTML 25)
* inline (HTML 45)
* inline image (HTML 52)
* internal style sheet (HTML 7)
* Internet (HTML 4)
* ISO-8859-1 (HTML 43)
* JavaScript (HTML 43)
* LAN (HTML 4)
* Latin-1 (HTML 54)
* li element (HTML 24)
* link element (HTML 25)
* links (HTML 4)
* local area network (HTML 4)
* markup language (HTML 5)
* Modernizr (HTML 43)
* namespace declaration (HTML 16)
* nested (HTML 8)
* network (HTML 4)
* node (HTML 4)
* numeric character reference (HTML 55)
* one-sided tag (HTML 9)
* opening tag (HTML 8)
* ordered list (HTML 35)
* p element (HTML 24)
* print server (HTML 4)
* quirks mode (HTML 11)
* script (HTML 43)
* section (HTML 2)
* server (HTML 4)
* SGML (HTML 5)
* Standard Generalized Markup Language (HTML 5)
* standards mode (HTML 11)
* strong element (HTML 24)
* structural elements (HTML 18)
* style sheet (HTML 7)
* syntax (HTML 10)
* tagging (HTML 5)
* tags (HTML 8)
* text-based browser (HTML 5)
* two-sided tag set (HTML 8)
* ul element (HTML 24)
* Unicode (HTML 54)
* unordered list (HTML 36)
* UTF-8 (HTML 54)
* validators (HTML 11)
* W3C (HTML 5)
* WAN (HTML 4)
* Web (HTML 4)
* Web browser (HTML 5)
* Web Hypertext Application Technology Working Group (HTML 6)
* Web page (HTML 5)
* Web server (HTML 5)
* WHATWG (HTML 6)
* white space (HTML 9)
* wide area network (HTML 4)
* World Wide Web (HTML 4)
* World Wide Web Consortium (HTML 5)
* XHTML (HTML 6)
* XHTML 2.0 (HTML 6)
* XML (HTML 6)
* XML vocabularies (HTML 6)

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