

Accessibility Primer and Checklist

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Introduction

To accommodate our diverse campus community, North Carolina State University is obligated and required to make all official university Web pages, including course materials, accessible to all of our audience, including people with visual, aural, mobility, color, learning, and other impairments. According to the North Carolina State University Web Accessibility Regulation, http://www.ncsu.edu/policies/campus_environ/non-discrimination/REG04.25.5.php:

“North Carolina State University (hereinafter, NC State) is required to provide reasonable access to its educational services, programs and activities in accordance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and North Carolina state law (N.C. Gen. Stat. § 168A-7). Accordingly, official NC State Web pages and online instructional material should be accessible to disabled persons where possible, or a reasonable alternative accommodation should be offered.”

According to the Regulation, University Web pages must meet the standards created by the (Federal) Access Board, commonly known as the Section 508 Guidelines. These Guidelines address Web pages that include images, multimedia, style sheets, data tables, frames, scripts, forms, links to external files (e.g., PDFs), as well as other elements. Please see the following checklist for information about meeting these requirements.

Resources for training on accessibility issues are available through Distance Education and Learning Technology Applications (DELTA) and the Information Technology Division. Consultation services are also available through DELTA. Contact the LearnTech help desk at learntech@ncsu.edu, for an instructional house call, email assistance, or to request custom training. For tools and resources available on the Web, please see the Additional Resources section of this document.

Overview

These tip sheets are created to provide the faculty members and other professionals at North Carolina State University with an overview of important points to consider when developing an accessible course site and website as well as other resources created for online use.

The first section of this document, “Checklist for Creating Accessible Web Content”, is the Section 508 Guidelines in a Frequently Asked Questions format plus several components from the Web Content Accessibility Guidelines as recommended by the W3C. In the second section of this document, “Section 508 Guidelines”, you will find listed the full Section 508 Guidelines which you must take into consideration while creating any material for the World Wide Web.

Checklist for Creating Accessible Web Content

Validation: How do I check to see if my Web pages are accessible?

- Run your page through an accessibility validation tool like WebXACT (<http://www.webxact.com>), which is a free online service that lets you test single pages of Web content for quality, accessibility, and privacy issues.
- Use validation tools like LIFT for Dreamweaver or AccVerify/Repair to monitor, evaluate, and retrofit Web content against Section 508 accessibility standards.
- For more information on software tools to validate and retrofit Web content, see <http://ncsu.edu/it/access/software/tools.php>

Text: What do I need to do to make my Web pages accessible if I am only using text?

- Give each page a unique title.
- Use Heading tags to indicate headings and subheadings. Screen reader users tab through the headings to quickly navigate through content.
- Use relative rather than fixed font sizes, (e.g., ems or percents, instead of pixels or points).
- Design your site with consistent navigation.
- Provide a link for users to skip over repetitive site navigation (“skip to content”), allowing them to get directly to the content. For those who use screen readers or other types of assistive technology, it can be a tedious and time-consuming chore to wait for the assistive technology to work through and announce each of the standard navigational links before getting to the intended location.
 - For more information about ways to create links to skip navigation menus, see <http://www-03.ibm.com/able/guidelines/web/webskip.html>
- Clearly identify the target of your links with text other than “Click Here”. Avoid multiple links with the same name. Screen reader users can list the links from a webpage and navigate through a site in this way. Links that say “Click Here” or “More” do not contain enough information when removed from context.
- Use means other than color to distinguish one type of information from another.
 - For example, in a data table with negative values, do not only indicate them in red, also include a minus sign or parentheses.
 - Avoid red/green and blue/yellow combinations, as distinguishing these colors can be problematic for those with color-blindness.
 - Make sure there is adequate contrast between your text and your background colors.
 - For more information about color and contrast, see <http://www-03.ibm.com/able/guidelines/web/webcolor.html>
- Use Cascading Style Sheets (CSS) to provide a better solution for formatting the layout of text, but ensure that the page is still readable without them. This allows users to substitute their own style sheet to accommodate their own needs.

- For more information on using CSS, see <http://www-03.ibm.com/able/guidelines/web/webcss.html>
- Do not use moving text or other elements that cannot be stopped by the user.
- Do not use any features that cause all or part of your text to blink or flash. It may cause seizures in some people.
 - For more information on blinking, moving, or flickering content, see <http://www-03.ibm.com/able/guidelines/web/webblinking.html>
- Avoid opening new windows. When opening a new window, warn the user by defining the target window with a unique name (e.g., target="Calendar").

Images: What if I include images in my Web page?

- Add appropriate alternative text ("alt attribute") for images. Add null alternative text (alt="") for decorative and spacer images. This applies to all Web content including HTML, Word documents, and PowerPoint files.
- Summarize the content of graphs, charts, or complex images. Use the letter "D" ("D-link") to link to an HTML page with the description or data.
 - For information on making graphs and charts accessible, and on how to use D-links, see <http://www-03.ibm.com/able/guidelines/web/webgraphs.html> .
- Avoid using animated graphics, or make sure the animation interval is 3 seconds or more to avoid causing seizures in some people with Photosensitive Epilepsy.
- For more information about creating accessible images, see <http://www-03.ibm.com/able/guidelines/web/webimages.html>

Image maps: What if I am using an image map?

An "image map" is a picture or graphic that provides multiple links to other Web pages, from the same image, depending on where a user clicks on that image.

- Use image maps which allow an author to assign alternative text to each image map "hot spot" link area.
- Provide alternative text for the base image.
- For more information about creating accessible image maps, see <http://www-03.ibm.com/able/guidelines/web/webmaps.html>

External files: What do I need to do if I link to files like PDFs, Word documents, PowerPoint files, or multimedia files that require a Browser plug-in or external viewer?

- When a Browser plug-in (e.g., Acrobat Reader or QuickTime Player) or external viewer (e.g., Word Viewer or PPT Viewer) is required in order to view content, you should inform your users by providing a link to a source that provides a free download for the plug-in.
- *Note: See the last two sections for making Word and PPT files accessible.*

Multimedia: What do I need to do to make my multimedia files accessible?

- Create a text transcript for audio content (e.g., podcasts).
- Provide synchronized text transcripts (captions) for videos that have an audio component.
- For strictly video content, provide text alternatives or have a D-link to a description (for an explanation of D-link, see the Images section).
- For more information on making multimedia accessible, see <http://www-03.ibm.com/able/guidelines/web/webmultimedia.html> and <http://ncsu.edu/it/access/webaccess/nontext/caption.php>

Data tables: What if I am including data tables in my Web page?

- Use proper HTML labeling of data tables to indicate which rows and/or columns contain heading information. This will assist those who cannot see the table make sense of the data.
- Provide either a table summary or a caption describing the type of information within the data table.
- Try to avoid using tables for layout; use CSS for positioning instead. Make sure the page is readable without the style sheet attached.
- For more information about coding for data tables, see <http://www.webaim.org/techniques/tables/data.php#th>
- For an example of coding complex data tables (those with two or more levels of headings), see <http://www.webaim.org/techniques/tables/data.php#id>
- For more information about creating accessible tables, see <http://www-03.ibm.com/able/guidelines/web/webtableheaders.html>

Forms: How do I make online forms or surveys accessible?

- Explicitly associate form labels with input elements. Some additional coding is usually required to make online input forms user-friendly.
 - For example, if a form is asking for the user to input a name (Name:) use the “Label” tag to associate the word “Name” with the input text box.
- If a form is going to “time out,” make sure to provide a way for the user to extend the time period.
 - For more information on accessible use of Timed Responses, see <http://www-03.ibm.com/able/guidelines/web/webtiming.html>
- Consider making an untimed version of timed quizzes if needed.
- For more information about creating accessible forms, see <http://ncsu.edu/it/access/webaccess/forms/forms.php>

Frames: What if my site is using frames?

- Minimize the use of frames. The frames layout for a Website is more difficult to create and maintain. Frames also are much more difficult for users who are viewing the page with a screen reader, because the user must jump back and forth from different windows to navigate through the site.
- Do not make content in one frame dependent on another (e.g., navigation).
- For more information about coding for frames, see <http://www-03.ibm.com/able/guidelines/web/webframes.html>

JavaScript: What if I want to include JavaScript elements in my Web page?

- Features such as “fly-out” menus that appear only when you “mouse over” the menu can be a problem for the user who does not have/cannot use a mouse. Make sure that mouse over features can also be triggered by keyboard entries.
 - For information on creating accessible dynamic menus, see <http://cita.uiuc.edu/html-best-practices/nav/dmenus.php>
- Provide alternative standard links for links activated only by JavaScript.
- Do not use “onChange” in form drop-down menus; provide a “go” button instead.
- Include a “Noscript” tag to provide alternative content so that the page will make sense and can still be used when scripts are turned off or not supported.
 - For more information on using “noscript” tags and JavaScript accessibility, see <http://ncsu.edu/it/access/webaccess/scripts/scripts.php>
- For more information about creating accessible scripts, see <http://www-03.ibm.com/able/guidelines/web/webscripts.html>

Word: What do I need to do to make sure my Word files are accessible?

- When creating Word docs for the Web it is best to avoid complex formatting. Specific suggestions follow:
 - Use standard fonts.
 - Use the Style feature to indicate section headings.
 - Use Word's "Create Tables" to display multiple columns of data. (Do not use tabs to format data.) Avoid merging cells, and add column/row heading information when applicable.
 - Avoid graphics created with Word's "Drawing" feature.
 - "Chunk" your content into relatively short paragraphs and try to place the key points near the beginning of the paragraph.
 - Avoid using text boxes as they tend to "float" when displayed in a Browser.
 - Use the bulleted list feature of Word as opposed to creating your own numbering or using tabs.
 - If you want multiple columns use Word's built-in column feature as opposed to a layout table.

PowerPoint: What do I need to do to ensure my PowerPoint files are accessible?

- When creating PPT files that will be viewed on the Web there are several considerations:
 - Be aware that the order in which your bulleted lists will appear with a screen reader is the order in which you added the items to the slide and NOT necessarily the order that you see within PPT.
 - Avoid using text boxes as they tend to "float" when displayed in a Browser.
 - Placing a description of any charts or graphics within the Speaker's Notes section will provide the required "alternate text" for these types of content.
 - Use LecShare (<http://ncsu.edu/it/access/software/lecshare/lecshare.php>) to create accessible web presentations from PowerPoint files.

Alternatives: What if I can't make my page accessible?

- If accessibility cannot be accomplished any other way, provide a text-only page with equivalent information or functionality. Use LIFT Assistive (<http://ncsu.edu/it/access/software/lift/texttranscoder.php>) to generate a text-only version of your Web page.
- Alternative text and the ability to skip the navigation are still required for an accessible text-only page.
- For more information on text-only pages, see <http://www-03.ibm.com/able/guidelines/web/webtext.html>

Assistance: How do I get help making my pages accessible?

- See the Accessible IT @ NC State website (<http://ncsu.edu/it/access/>) for resources and tutorials for creating accessible websites and electronic documents.
- Attend accessibility workshops available from Distance Education and Learning Technology Applications (DELTA) (<http://delta.ncsu.edu/workshops>) and the Information Technology Division (ITD) (<http://itd.ncsu.edu/education/>).
- Request Custom Training sessions available from DELTA (http://delta.ncsu.edu/learn/instructional_house_calls/custom_training/), as well as Instructional House Calls (http://delta.ncsu.edu/learn/instructional_house_calls/) and email support (learntech@ncsu.edu).
- Contact DELTA's Instructional Services Help Desk at learntech@ncsu.edu for more information.

Section 508 Guidelines

Section 508 (a): Text Equivalents.

A text equivalent for every non-text element shall be provided (e.g., via “alt”, “longdesc”, or in element content).

Section 508 (b): Multimedia Presentations.

Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

Section 508 (c): Color.

Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

Section 508 (d): Readability.

Documents shall be organized so they are readable without requiring an associated style sheet.

Section 508 (e): Server-side image maps.

Redundant text links shall be provided for each active region of a server-side image map.

Section 508 (f): Client-side image maps.

Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

Section 508 (g): Simple Data tables.

Row and column headers shall be identified for data tables.

Section 508 (h): Complex data tables.

Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

Section 508 (i): Frames.

Frames shall be titled with text that facilitates frame identification and navigation.

Section 508 (j): Flicker rate.

Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Section 508 (k): Text-only alternative.

A text-only page, with equivalent information or functionality, shall be provided to make a Web site comply with the provisions of these standards, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

Section 508 (l): Scripts.

When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

Section 508 (m): Applets and plug-ins.

When a Web page requires that an applet, plug-in or other application be present on the client system to interpret page content, that page must provide a link to a plug-in or applet that complies with Section 508 (a) through (l).

Section 508 (n): Electronic forms.

When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

Section 508 (o): Navigation links.

A method shall be provided that permits users to skip repetitive navigation links.

Section 508 (p): Time delays.

When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

Additional Resources:

DELTA Instructional House Call Request:

http://delta.ncsu.edu/learn/instructional_house_calls/

Accessible IT @ NC State:

<http://ncsu.edu/it/access/>

Software Tools for Validation, Repair and Authoring of Accessible Content:

<http://ncsu.edu/it/access/software/>

Designing for Accessibility – Best Practices:

<http://ncsu.edu/it/access/webaccess/bestpract.php>

Access Board Section 508 Guide:

<http://www.access-board.gov/sec508/guide/1194.22.htm>

IBM Human Ability and Accessibility Center: Developer Guidelines for Web Accessibility:

<http://www-03.ibm.com/able/guidelines/web/accessweb.html>

Web Accessibility Best Practices from the University of Illinois Urbana/Champaign:

<http://www.cita.uiuc.edu/html-best-practices/>

WebAIM Accessibility Checklist:

<http://www.webaim.org/standards/508/checklist.php#one>