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## *IT Security Standard:*

# **Web Information Accessibility**

### **Introduction**

This standard defines the steps needed to implement the Bellevue College IT Security Policy with relationship to the manner in which Web pages at Bellevue College comply with federal and state standards with regard to accessibility under the Americans with Disabilities Act. The standard will be reviewed on an annual basis or when changes are implemented.

### **Scope**

This standard defines the expectations which apply to the use of Bellevue College resources to create, store, and publish Web pages on any Bellevue College Web server. This standard is necessary to help assure compliance with federal and state law. The concepts set forth in this standard currently apply to public Bellevue College sites on the World Wide Web, Web development projects, information kiosks and services accessed through the Web, and multimedia (including audio and video) distributed via the Web. They will also apply to any other service provided through Bellevue College Web servers in the future.

### **Exceptions**

A variety of exceptions to this standard may be expected. These exceptions, when granted, will be documented in either a platform specific standard or in a memo documenting the exception. Exceptions may be granted by the Bellevue College IT Security Administrator, the Dean of Information Resources (IR), or any IR director authorized by the Dean. Copies of all documentation regarding exceptions will be kept on file with the Bellevue College IT Security Administrator. This documentation will include:

1. A detailed description of the exception.
2. A description of why the exception is necessary.
3. A risk assessment by the Bellevue College IT Security Administrator and/or the Dean of Information Resources, or designee.
4. A description of the compensating controls that are in place to mitigate risk created by the exception.

### **Business Impact and Risk, Threat, and Vulnerability Analysis**

This standard does not so much address the security risks and vulnerability associated with the use of the Internet and the World Wide Web, which have generally been documented in other Bellevue College IT Security Standards, as much as it addresses the business impact of non-compliance with federal and state statutes. There is an imperative for Bellevue College to make its Web presence accessible in all situations, and to ensure that individual attempts to make Bellevue College sites accessible do not compromise the security established under other IT Security Standards. Therefore, Bellevue College users must read and comply with the requirements of this standard which limits any additional vulnerability. Because the need for full communication and access to information is such a vital part of fulfilling the educational and administrative missions of the college, whatever risks exist in the use of these resources are minor in comparison with their positive business impact.

There are no additional significant threats to the security of Bellevue College networks and systems addressed in this standard. However, the business impact of non-compliance with these standards includes risks of: loss of revenue, dissatisfaction of those to whom Bellevue College provides services, and a loss of reputation. Given the nature of the assets affected by use of the Internet and the Web, all of these risks are significant, and could cause considerable harm to Bellevue College.

## Standard

In response to the need to ensure equal access to electronic and information technologies, Bellevue Community College has developed a set of standards for Web page design. Just as environmental obstacles have created boundaries for individuals with disabilities, the Web presents an entirely different set of obstacles.

These standards address the same minimum requirements for accessibility as recommended by the World Wide Web Consortium ([www.w3c.org](http://www.w3c.org)) and the U.S. Access Board ([www.access-board.gov](http://www.access-board.gov)). The Access Board is an independent federal agency whose primary mission is to promote accessibility for individuals with disabilities, and to develop the standards outlined by the Rehabilitation Act Amendments of 1998.

Bellevue Community College is committed to providing information and services to *all* users, regardless of their method of access or the constraints of the technology they use to access information.

Users that may have unique needs include:

1. Individuals who may not be able to see, hear, move, or may not be able to process some types of information easily or at all.
2. Individuals who may not be able to use a keyboard or mouse.
3. Individuals who may have a text-only screen.
4. Individuals who may be in a situation where their eyes, ears, or hands cannot be used
5. Individuals who may be accessing Web pages utilizing a text reader

Bellevue Community College requires that all Web pages sponsored by, affiliated with, and which represent Bellevue Community College comply with information accessibility (ADA) standards for Web pages, as presented in this document.

The college recognizes that the ever-changing nature of the Web and other technologies necessitates that these standards are revised on a regular basis to evolve alongside the innovations of the technology. Compliance with these technical standards was expected of all Bellevue College websites beginning September 1, 2003.

## REQUIREMENTS

Bellevue College Information Accessibility (ADA) Standards for Web Pages are outlined in detail in the following sections. Web pages produced for Bellevue Community College and those that represent the college are required to comply with all general requirements (numbered 1 through 12).

Web pages that are created to support a program or project that is funded through a federal grant or type of funding from the federal government are required, by law, to be in compliance with additional standards (numbered 1 through 15). All standards presented in this document have been taken directly from the federal standards that were approved and now enforced by the U.S. Access Board as of June 2001. For more information about this requirement, please review the Section 508 home page at [www.section508.gov/](http://www.section508.gov/).

### **Requirement 1: Provide a text equivalent for all non-text elements.**

(Based on: W3C: 1.1; DOJ, Section 508: a)

1. **For images:** provide an ALT description
2. **For spacer images:** provide an empty ALT description (ALT=" ")
3. **For image maps:** provide an ALT description for each mapped area
4. **For images requiring very long descriptions:** provide a <LONGDESC> and a D-link, referring the reader to a linked description page. (This is useful for charts, graphs or images where the explanation is more complicated than just a few words.)
5. **For ASCII art:** Provide method for user to skip over the ASCII art and provide linked description of art. (Try to substitute common ASCII art symbols with their text alternative such as ;-) versus <wink>.)

### Rationale:

1. Information conveyed in all non-text elements must also be readable by screen readers, non-visual browsers, and Braille readers.

### Examples:

1. How to place an ALT description in an image element:

```
<IMG SRC="filename.gif" width="220" height="165" ALT="description of image goes here">
```

2. How to place an ALT description in an image element used a spacer (contains no info):

```
<IMG SRC="filename.gif" width="220" height="165" ALT=" ">
```

3. How to place an ALT description to an image map:

```
<IMG SRC="images/filename.gif" width="212" height="100" usemap="#navigation" border="0"
ALT="example of navigation">
<MAP NAME="navigation">
<AREA SHAPE="rect" coords="8,7,91,30" HREF="classes.html" ALT="classes">
<AREA SHAPE="rect" coords="8,37,95,60" HREF="contact.html" ALT="contact">
<AREA SHAPE="rect" coords="8,65,140,90" HREF="information.html" ALT="information">
</MAP>
```

4. How to link to a long description using the D-link:

```
<IMG SRC="images/chart.gif" ALT="cups of coffee chart" LONGDESC="cups-coffee.html"
width="286" height="180"> <A HREF="cups-coffee.html">[D]</A>
```

The LONGDESC attribute and the D-link lead the reader to a page that describes the content of the image, graph, table, plug-in or applet that is being described. For a cleaner look, a transparent image containing the ALT description\ "D" may be substituted for the D-link text. This text-equivalent should not replace the LONGDESC attribute, only the visible D-link.

2. How to skip over ASCII art:

```
<A HREF="#post-art">skip over ASCII art</a><BR>
<!-- ASCII art goes here -->
<A NAME="post-art">description of art</A>
```

For a cleaner look, replace the visible link with a transparent image (containing the ALT description, "Skip over ASCII art") that is linked to the description of the ASCII art.

### **Requirement 2: Don't rely on color alone.**

Ensure that all information conveyed in color is also available without color. (Reference: W3C: 2.1; DOJ, Section 508: c)

### Rationale:

1. People who are colorblind may not be able to decipher the information portrayed in color.
2. If the foreground and background colors or tones are similar the user may not be able to read any of the sites content.

### Examples:

1. Don't say, "the information presented in green shows new employees, and the information in blue shows existing employees."
2. Use context or markup to convey differences in color-coded information.
3. On graphs use different textures to convey the information (dotted, dashed, solid lines) instead of just color.

To test this requirement, try printing the Web page in grayscale (without color) to see if the navigation and content can be interpreted.

### **Requirement 3: Use markup to identify changes in natural language.**

If the page contains more than one language such as both English and Spanish, or the page is written in a format for a Braille reader, use appropriate markup (the LANG attribute) to alert the reader of this change. (Reference: W3C: 4.1)

#### Rationale:

1. Text intended to be read by Braille readers (software/hardware) must be identified with the LANG attribute so that the software will correctly substitute the appropriate key control codes for the user.
2. Text spoken by a speech synthesizer uses the LANG attribute to properly translate text using the appropriate accent with proper pronunciation. If the language transition is not identified properly, the synthesizer will try its best to speak the words in the primary language it works in, thus, the French word for car, "voiture" would be pronounced "voter" by a speech synthesizer that uses English as its primary language.

#### Example:

1. How to add the LANG attribute:

```
<BODY>
<P> ...Interpreted as English(or default language)...</P>
<P LANG="es">...Interpreted as Spanish...</P>
<P>...Interpreted as English again...</p>
<P>...English text interrupted by<EM LANGE="fr">some
French</EM>English begins here again...
</BODY>
```

Language codes: Two-letter primary codes are reserved for [ISO639] language abbreviations: fr (French), de (German), it (Italian), nl (Dutch), el (Greek), es (Spanish), pt (Portuguese), ar (Arabic), he (Hebrew), ru (Russian), zh (Chinese), ja (Japanese), hi (Hindi), ur (Urdu), and sa (Sanskrit). <http://www.w3.org/TR/html401/struct/dirlang.html#langcodes>

### **Requirement 4: Make pages readable with or without Style Sheets.**

When using Cascading Style Sheets (CSS), make sure they are properly designed so page organization and page formatting remains intact even when the style sheet is disabled or turned off. (Reference: W3C: 6.1; DOJ, Section 508: d)

### **Requirement 5: Update dynamic content.**

Ensure that all equivalents for dynamic content are updated when the dynamic content changes. (Reference: W3C: 6.2)

### **Requirement 6: Don't use <BLINK> and avoid flickering on the page**

Do not use the <BLINK> tag. When possible, avoid images, marquees, animations, scripts, applets, or plug-ins that flash, flicker, or blink. Blinking images with frequencies higher than 2 Hz and lower than 59 Hz (2-59 times per second) may cause seizures for individuals with photosensitive epilepsy. (Reference: W3C: 7.1; DOJ, Section 508: j)

### **Requirement 7: Make sure content and link text is clear.**

Write in complete, grammatical sentences and label links in a meaningful way. Use the clearest and simplest language appropriate for the site's content. (Reference: W3C: 14.1; 13:1)

#### **Examples:**

1. **Don't use:** "Click here" to point the reader to content. A text reader will not be capable of interpreting the information contained behind a generic text link. Instead, link off of meaningful words or labels within a sentence.  
**Do use:** For more information about athletics, visit the [Bellevue College Athletics home page](#).
2. Don't misspell words. A text reader, or users who are reading the document with a Braille reader, will have difficulty interpreting the meaning of the text properly. (Example: Ro els eit's hard t o urdestand you.)
3. Use proper grammar and sentence structure. A text reader will read a poorly structured sentence in an awkward way which will make it difficult to understand. **Avoid** using passive verbs such as "A lot of coffee was had by me today." **Instead, use:** "I had a lot of coffee today."

### **Requirement 8: Server-Side image maps.**

Provide redundant text links for each active region of a server-side image map. Choose to use client-side image maps instead of server-side image maps except where regions cannot be defined with an available geometric shape. (See also Requirement 1: Text Equivalents) (Reference: W3C: 7.1; 9:1; DOJ, Section 508: e; f)

### **Requirement 9: Use appropriate markup in data tables so they are readable.**

Identify row and column headers in the page markup. Use markup to associate data cells and header cells for complex tables that have structural divisions beyond those implicit in the rows and columns (if they have two or more logical levels of row or column headers). For in depth use of tables and their attributes, refer to the W3C examples at: <http://www.w3.org/TR/1999/REC-html401-19991224/struct/tables.html>. (Reference: W3C: 5.1; 5.2; DOJ, Section 508: g; h)

#### **Examples:**

1. Use THEAD, TFOOT, and TBODY to group rows, COL and COLGROUP to group columns, and the 'AXIS,' 'SCOPE' and 'HEADER' attributes to describe more complex relationships among data.
2. Identify row and column headers. The <TD> tag refers to the 'data cell,' and the <TH> tag refers to the 'header cell.' If the cells contain a heading, substitute <TD> with <TH>.

```
<TABLE width="80%" BORDER="0" CELLSPACING="0" CELLPADDING="0">
<TR>
  <TH>Name</TH>  <TH>Phone Number</TH>
  <TH>Age</TH>  <TH> Weight</TH>
</TR>
<TR>
  <TD>Steve Nelson</TD>  <TD>425/555-2186</TD>
  <TD>54</TD>  <TD>130 lbs.</TD>
</TR>
<TR>
  <TD>Maria Sanchez</TD>  <TD>425/555-8741</TD>
  <TD>43</TD>  <TD>120 lbs.</TD>
</TR>
</TABLE>
```

3. How to add 'AXIS', 'ID' and 'HEADERS' attributes to describe complex relationships among data:

```

<TABLE border="1">
<CAPTION>Travel Expense Report</CAPTION>
<TR> <TH> <TH ID="header2" AXIS="expenses">Meals
  <TH ID="header3" AXIS="expenses">Hotels
  <TH ID="header4" AXIS="expenses">Transport
  <TD>subtotals</TD> <TR> <TH ID="header6" AXIS="location">San Jose
  <TH> <TH> <TH> <TD> <TR> <TD ID="header7" AXIS="date">25-Aug-97
  <TD headers="header6 header7 header2">37.74
  <TD headers="header6 header7 header3">112.00
  <TD headers="header6 header7 header4">45.00
  <TD>
  <TR> <TD ID="header8" AXIS="date">26-Aug-97
  <TD HEADERS="header6 header8 header2">27.28
  <TD HEADERS="header6 header8 header3">112.00
  <TD HEADERS="header6 header8 header4">45.00
  <TD>
  <TR> <TD>subtotals
  <TD>65.02</TD>
  <TD>224.00
  <TD>90.00
  <TD>379.02
  <TR> <TH ID="header10" AXIS="location">Seattle
  <TH> <TH> <TH> <TD>
  <TR> <TD ID="header11" AXIS="date">27-Aug-97
  <TD HEADERS="header10 header11 header2">96.25
  <TD HEADERS="header10 header11 header3">109.00
  <TD HEADERS="header10 header11 header4">36.00
  <TD>
  <TR> <TD ID="header12" AXIS="date">28-Aug-97
  <TD HEADERS="header10 header12 header2">35.00
  <TD HEADERS="header10 header12 header3">109.00
  <TD HEADERS="header10 header12 header4">36.00
  <TD>
  <TR> <TD>subtotals
  <TD>131.25
  <TD>218.00
  <TD>72.00
  <TD>421.25
  <TR> <TH>Totals
  <TD>196.27
  <TD>442.00
  <TD>162.00
  <TD>800.27
</TABLE>

```

**Requirement 10: If Using Frames, Title All Frames Within the Page Frameset.**

All documents within the frameset of your Web page should be titled using the 'TITLE' attribute to facilitate navigation with screen readers and text-based browsers. (Reference: W3C: 12.1; DOJ, Section 508: i)

Note: The use of frames often presents problems for search indexing, book marking, or printing content. If the intent of your frameset is to provide navigation elements, your cause will be better served by using server-side includes or the site management features of a robust design program.

### Example:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN">

<HTML>
<HEAD>
<TITLE>Title of Your Page</TITLE>
</HEAD>
<FRAMESET cols="10%, 90%"
  TITLE="Our library of electronic documents">
  <FRAME SRC="nav.html" title="Navigation bar">
  <FRAME SRC="doc.html" title="Documents">
  <NOFRAMES>
    <A HREF="lib.html" TITLE="Library link">
      Select to go to the electronic library</A>
  </NOFRAMES>
</FRAMESET>
```

### **Requirement 11: Applets and Scripts.**

Ensure that pages containing applets and scripts are usable when scripts, applets, or other programmatic objects are turned off or not supported. If it is not possible, provide equivalent information on an alternative accessible page. (Reference: W3C: 6.3; DOJ, Section 508: m)

### **Requirement 12: Multimedia.**

Provide an auditory description of the important information of the visual track of a multimedia presentation. If providing time-based multimedia such as a movie or animation, provide a synchronized equivalent.

If it is not possible to make the page accessible, provide a link to an alternative page that is accessible and contains equivalent information (or functionality). (Reference: W3C: 1.3; 1.4; 11.4; DOJ, Section 508: b; k)

## **Additional Requirements for Federally Funded Projects**

Pages that are developed in support of projects that receive federal funding through a grant or other means must comply with federal accessibility standards which are enforced by the U.S. Access Board as of June 2001. For more information about this requirement, please review the Section 508 home page at [www.section508.gov/](http://www.section508.gov/).

### **Requirement 13: Make Online Forms Accessible.**

(Reference: W3C: 10.2; DOJ, Section 508: b)

#### **Examples:**

1. Don't separate the form element with its text description to different table cells.
2. If you do separate the form elements, use <LABEL> and <FOR> attributes. (For more details about this example, refer to the W3C's example at: <http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990324/wai-pageauth.html#tech-unassociated-labels>).

```
<FORM>
<TABLE>

<TR>
<TD><B><LABEL FOR="first"> first name:</LABEL> </B></TD>
<TD><INPUT TYPE="text" NAME="firstname" ID="first" ></td>
</TR>
```

```

<TR>
<TD><B><LABEL FOR="last"> last name:</LABEL> </B></TD>
<TD><INPUT TYPE="text" NAME="lastname" ID="last" ></TD>
</TR>
</TABLE>

<P>
<INPUT TYPE="submit" VALUE="submit">
</FORM>

```

**Requirement 14: Skip Repetitive Navigation.**

Provide a method for the reader to skip over the navigation of your site and jump directly to the site's content. (Reference: DOJ, Section 508: o)

**Examples:**

1. Use a text link or an invisible (transparent) gif with the 'ALT' attribute value "skip navigation."

- a. How to insert a skip navigation with a text link:

```

<A HREF="#body">skip navigation</A> <BR>
<!--Navigation links go here -->
<A NAME="body"></A> page content goes here

```

- b. How to insert a skip navigation with a transparent image:

```

<A HREF="#body"><IMG SRC="transparent.gif" ALT="skip navigation"></A><BR>
<!--Navigation links go here -->
<A NAME="body"></A> page content goes here

```

**Requirement 15: Avoid Using Time Delays.**

Avoid using page refresh, page redirects, or page time-outs. When you must use a *timed response*, alert the reader and give sufficient time to indicate more time is required. (Reference: DOJ, Section 508: p)

**Other Tips on Making Pages Accessible**

There are many other ways you can improve the accessibility of your pages. Bellevue College encourages you to also pay attention to these other methods of page design.

**Usability**

1. Clearly label all non-HTML formatted documents such as PDF files, streaming video or audio files, multimedia files, MS Word and Excel documents, etc. Provide a link to adequate instructions for downloading necessary plug-ins and software for accessing this information.

*Example:*

"This audio clip may be played using RealPlayer. You may download this software for free at [www.realnetworks.com](http://www.realnetworks.com) to play this file. A [text transcript](#) of this clip is also available."

2. Use headings, lists and consistent structure to convey document structure and use them according to specification. (Reference: W3C: 3.5)
3. Choose color schemes that provide sufficient contrast between text and background. Ensure that all information conveyed with color is also available without color.

## **Writing for the Web**

1. Write clear, effective content. The content of your site should be easy to read for everyone, especially people with reading and/or cognitive disabilities.
2. State the topic of the sentence or paragraph at the beginning of the sentence or paragraph (this is called "front-loading"). This will help both people who are skimming visually, but also people who use speech synthesizers.
3. Minimize the use of any unnecessary words.
4. Make pages easy to scan, but not at the expense of making the content confusing or incomplete.

## **Testing Pages**

Pages should be tested in multiple browsers and both PC and Macintosh platforms (when possible). We recommend using one or more of the convenient HTML validation tools on the Web.

1. **Lynx**
  - a. Lynx is a free text-based web browser. There is an online version of this browser available at <http://www.delorie.com/web/lynxview.html>
2. **Bobby**
  - a. Bobby will check your site for W3C priority 1 level standards. Bobby reports are often complicated to decipher, but will offer you some constructive examples of how to bring your pages up to compliance. <http://bobby.cast.org/>
3. **W3C HTML Validation Service --** [validator.w3.org/](http://validator.w3.org/)
4. **Dreamweaver Extensions**
  - a. If you use Dreamweaver to develop your site, there are several accessibility extensions you can use to evaluate and create your site. Macromedia has also recently released an accessibility extension for software versions 4. Check the [www.macromedia.com](http://www.macromedia.com) to find out if you are eligible to receive this free add-on.

## **Sanctions**

Violations of the provisions of this, or any Bellevue College IT security standard or policy, will be dealt with immediately in the same manner as any violations of Bellevue College policies, and may result in disciplinary review. In such a review, the full range of disciplinary sanctions is available, including:

1. Permanent loss of computer use privileges;
2. Denial of future access to Bellevue College IT resources;
3. Disciplinary action – any disciplinary action will be taken in accordance with appropriate procedures as established by the Vice President of Human Resources (for employees) or the Dean of Student Services (for students);
4. Dismissal from the college; and/or
5. Legal action.

Those users who misuse or abuse any computing or network resource may have their login accounts closed and access to the systems immediately terminated. Some violations of this standard may also constitute a state, local, or federal criminal offense.

## **Appendix A – References**

1. Academic Network Web Space Usage Policy
2. Bellevue College IT Security Standard: Web Servers
3. Bellevue College IT Security Standard: Web Space Usage
4. Bellevue College Web Publishing Guide, <http://www.bcc.ctc.edu/webpublishing/>
5. U.S. Access Board Web Accessibility Standards <http://www.access-board.gov>

Effective Date: July 2003  
Date Last Modified: July 10, 2009