SUNY Web Accessibility Standards Implementation Guidance

The following guidance has been created to provide clarification on baseline web accessibility compliance. The standards are based on the Web Content Accessibility Standards (WCAG) 2.0 AA standards. For a complete list of WCAG 2.0 principles, refer to the Web Accessibility Initiative.

Each benchmark is categorized as “required” or “strongly recommended”. Conformance to these standards must be given high priority in the development and implementation of the campus accessibility action plan.

These standards are targeted to three specific audiences defined as:

1. Developer - responsible for coding and programming
2. Designer - responsible for creating look and feel
3. Content Creator - responsible for creating and editing content

The audience categorizations are meant to be recommendations and could vary. Each campus should determine the applicability of the standards to each audience based on their specific policies, governance models, and technologies.

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Images

Provide meaningful alt text for all images, except in cases described below

Required

What it Means
Alternative text (alt text) provides a textual alternative to non-text content on web pages. Alt text needs to provide meaningful information, especially the context in which the image is being used.

Why it Matters
If a web page includes images, the content of those images will be inaccessible to people who are unable to see. Alternative text presents the content or function of an image to screen reader users or in other situations where images cannot be seen or are unavailable.

How to Implement
Writing good alt text can be a challenge to implement correctly. It requires understanding the purpose and context of the image.

For more information:

- See Webaim's article on alternative text.

Notes on Testing
Automated testing tools can locate images that do not have alt text. However, automated tools cannot evaluate if the alt text is meaningful. For example, older CMS systems would include the file name as the alt text by default which in most instances is not meaningful. In addition to automated tools, manually check images on high traffic and mission critical pages.

Use null alt text for decorative images (alt="")

Required

What it Means
Decorative images are images that don't add value to a page. They provide no function or information beyond aesthetics. Any image that is decorative should include an alt attribute with a blank value.

Why it Matters
Every image is required to have alt text. Using a null alt text is a standard technique that communicates to screen readers that the image can be ignored. Without the blank alt attribute, a screen reader will typically read the full file name.

How to Implement
alt="" (no space between the quotation marks)

In addition, some assistive technologies support the WAI ARIA role = “presentation”. See decorative images for details.

Notes on Testing
This can be tested using automated tools. That being said, what defines a decorative image is open to interpretation. Decisions on defining decorative images should be based on usability and user experience for people using assistive technology.

Images used as links (without accompanying text description) have alt text indicating link target

Required

What it Means
When an image is used for a hyperlink, the alt attribute describes the link destination.

Why it Matters
If an image describes where its associated hyperlink goes, a screen reader will not serve the same meaningful information about the link without the alt attribute.

How to Implement
The WCAG Functional Images guide provides examples of good practices.

Notes on Testing
While some automated tools have the capability to test to see if an image link is missing alternative text, manual testing will be required in most instances.

If the same visual presentation can be made using text alone, an image is not used to present that text.

Strongly Recommended

What it Means
Do not provide text-based information in images, unless the presentation of the text is essential to the information being conveyed, such as in a logo.

Why it Matters
Providing text instead of an image of text allows users to adjust the size, spacing, color and other formatting to suit their needs. Not all of this is possible with an image of text.

How to Implement
Train content creators on the value of separating text and images. In sections where text and images are commonly combined, such as a carousel slider, use a framework that supports accessible text coupled with the images.

When a text link and image link with the same URL are grouped, use a single <a> element and a null alt tag for the image.

Strongly Recommended

What it Means
When adjacent text and an image are used to point to the same URL, include both the text and <img> inside the same <a> element.

Why it Matters
When adjacent links go to the same location (such as a linked product image and an adjacent linked product name that go to the same product page) this results in additional navigation and repetition for keyboard and screen reader users.

How to Implement

```
<a href="home.html">
  <img src="house.gif" alt="home page icon">
  Go to the home page
</a>
```

Additional examples and more information are provided in W3C's technique: Combining adjacent image and text links for the same resource**.**

Notes on Testing
Automated testing. WebAim WAVE is particularly good at testing "adjacent" links

Multimedia

Establish a timely process for requesting synchronized captions for multimedia

Required

What it Means
If it is excusable to not add captions to certain private content, it should be easy to request the addition of captions.

Why it Matters
Video producers and content managers may not be able to anticipate the need for captions on content that was not made public. If the process to request captions is unclear or difficult, viewers who need captions will either have to go through a frustrating request process or will simply not have equally effective access to the content.

Provide synchronized captions for all public audio-video content

Required

What it Means
When audio and video are synchronized together, captions should be available to display all meaningful audio content. Captions convey not only the content of spoken dialogue, but also equivalents for non-dialogue audio information needed to understand the program content, including sound effects, music, laughter, speaker identification and location.

Why it Matters
People who are deaf or have a hearing loss can access the auditory information in the content through captions.

How to Implement
Captions should be synchronized with the video so that the caption text appears on-screen while the corresponding audio is playing. Captions should be easily readable, and should not obscure or obstruct relevant information in the video.

Captions can be created or obtained in many ways:

- Third-party Captioning services may be used to outsource the creation of captions.
- Speech-recognition software or services offer captioning at a lower cost, but typically at the loss of accuracy. Captions created in this way can be a useful baseline for in-house caption creation.
- Captions can be created or edited in many software-based platforms. In-house caption creators should be trained in best practices for closed captions.
- The content creator/owner may be able to provide a caption file.

How to Test

To test if content has synchronized captions, play the content in its normal player with the closed captions (cc) option turned on. Check several short spans throughout the content to ensure that captions are easily readable and accurately represent the auditory information being played at that time.

Note on Testing
Captions may not be adequate if they omit or misrepresent important auditory information. The success of captions cannot be evaluated automatically or by using an accuracy percentage. To evaluate success or failure, it is necessary to view the material with captioning turned on and check that *all* important sounds and dialogue are accompanied by accurate captions.
If confirming the accuracy of all captions is not reasonably achievable, it is advised to have a mechanism in place for viewers to easily report errors in captions and receive timely corrections. Additionally, closed captioning workflows should be evaluated to confirm that the captions being created are typically accurate.

Resources
Quality Captioning Guide, by the Described and Captioned Media Program (DCMP).

Provide transcripts for audio-only content

Required

What it Means
Audio content that is not synchronized with other content should be supplemented with a text transcript.

Why it Matters
A text transcript provides an accessible alternative for people that cannot adequately perceive the auditory information. It also provides a readable alternative in environments where audio is not available.

How to Implement
Provide a fully descriptive text transcript adjacent to all audio-only content. Typically, this is added immediately following the audio-only content.

Notes on Testing
Confirm that audio-only content is supplemented with a text alternative. Check that the dialogue in the transcript matches the dialogue and information presented in the audio-only presentation. If the audio includes multiple voices, check that the transcript identifies who is speaking for all dialogue. Check that the text alternative is made available in a way that it can be easily accessed from the location of the audio content.

Provide descriptive audio for prerecorded audio-video and video-only content, when needed

Strongly Recommended

What it Means
Any time meaningful or important information is included in video, it should be included in the audio track, or available in an optional descriptive audio track.

Why it Matters
Viewers who cannot adequately perceive visual information in a video typically cannot utilize captions. Including the visual information in audio presents an accessible alternative.

How to Implement
When producing content, include all visual information in audio narration, or produce an alternative descriptive audio track if an alternative audio track is supported in the video playback environment. For existing content, it may be necessary to add pauses to the content to allow time for the addition of descriptive audio.

If the audio and video tracks in a presentation are not synchronized in a meaningful way (e.g., a video supplemented by background music with no important time-based element), a descriptive text transcript may be used in place of descriptive audio.

Notes on Testing
Check that any meaningful visual information in a video is also provided in the synchronized audio track.

Ensure audio and video does not begin playing on page load

Required

What it Means
Any audio or video content does not automatically start. Instead, the user is given control to start, pause and stop audio and video content.

Why it Matters
People using screen readers navigate by listening, so any sound playing when the page loads will interfere because the audio that automatically starts playing will obscure the speech of the screen reader. As a result, users will not be able to navigate to the controls to stop the sound. In addition, video and flash animations that start automatically can be challenging for people with cognitive disabilities.

How to Implement
Do not configure video or audio to play automatically or as a result of a user action that was not clearly described as an option to start playback.

Notes on Testing
Confirm that video or audio does not start when a page loads, or at any time when the user has not intentionally started the playback.

Provide synchronized captions for live audio-video content

Strongly Recommended

What it Means
For live video that includes audio, provide captions.

Why it Matters
Without captions, live audio-video content is not equally effective or accessible to people who have a hearing impairment.

How to Implement
If the live streaming platform supports live captions, investigate the cost and resources of making it happen. If the live streaming platform does not support live captions, start evaluating other options. It is important to include live captioning costs in budget planning for high impact events, such as commencement.

Notes on Testing
Play the content in its normal player with the closed captions (cc) option turned on. Ensure that captions are easily readable and accurately represent the auditory information being played.

Color

Color is not the only means used to convey information

Required

What it Means
Color alone should not be the sole way used to convey information. Examples of failures: “required fields are red”, or disabled form fields displayed in gray. Use of color or spatial information is not discouraged, as long as other accessible methods of conveying the information are also utilized.

Why it Matters
There are a number of visual disabilities that are impacted by the sole use of color to convey information. People who are blind can’t see color at all. People who are color blind will have difficulty distinguishing between certain color combinations. People with low vision may have difficulty seeing colors.

How to Implement
Provide a secondary layer of information that can be discerned visually without color, and that can be determined by screen readers.

- “Required fields are marked in red with an asterisk”. Additionally, the aria-required attribute can be leveraged.
- “Use the green ‘Apply Now’ button below the form”
- Colored icons that convey information should be discernible regardless of color, and should have equally effective information in the alt attribute.
- Disabled form fields can be programmatically determined to be disabled, using the *disabled* attribute or the *aria-disabled* attribute.
- Color-coded information is acceptable if it is accompanied by equally effective textual information.

There is sufficient contrast between foreground and background text

Required

What it Means
The contrast between foreground and background text should be at least 4.5:1. Large text should have a contrast ratio of at least 3:1 to its background. Exceptions are only allowed for logotypes or certain incidental applications.

Why it Matters
Many people with low vision have challenges perceiving text if there is too little contrast between the foreground and background color. In addition, anyone using a mobile device outside in sunlight will benefit from increased contrast.

How to Implement
Confirm that all font colors meet the minimum contrast requirements for all background colors that they will be paired with.

Notes on Testing
Most automated accessibility tools will check for color contrast. In addition, there are a number of online tools available including:

- Tanaguru Contrast Finder
- Contrast Ratio by Lea Verou
- Colour Contrast Analyzer by Paciello Group
- Color Contrast Checker by WebAIM

Note: Automated color contrast tools may produce false positive and require manual evaluation in some instances. For example, the automated tools cannot identify when a background image or a gradient is used in place of a solid color.

There is sufficient contrast when color is used to convey information

Strongly Recommended

What it Means
Color is sometimes used to convey information in text, such as when hyperlinks are indicated only by color. The hyperlink color should have sufficient contrast so that people who cannot perceive the color difference can still perceive the contrast difference.

Why it Matters
Links conveyed by color cannot be discerned by some people who are color blind or who are visually impaired.

How to Implement
Use a contrast ratio of at least 3:1 when color is used to convey information in text, or use additional visual cues such as underlining all hyperlinks.

Notes on Testing
- Tanaguru Contrast Finder
- Contrast Ratio by Lea Verou
- Colour Contrast Analyzer by Paciello Group
- Color Contrast Checker by WebAIM

Links

Link text describes the destination of the link

Required

What it Means
Use descriptive link text that provides details about the destination of the link. For example, “Click Here”, “Learn More”, and “See All” do not provide enough information about the destination of the link.

Why it Matters
Many screen readers include an option to read a list of links on the page which makes it easier to navigate quickly through the page. Because of this, links should be meaningful out of context.

How to Implement
When inserting hyperlinks, use link text that clearly describes the destination of the link.

Notes on Testing
Remove any surrounding text and read the link text on its own. Can a user tell where the link will go by reading just the link text?

In addition, most automated tools can be used to find common words and phrases that do not provide enough information about the link destination.

All links are distinguishable.

Required

What it Means
There are no links with the same text that go to different locations.

Why it Matters
When different links have the same link text, the destination of those links may not be apparent without context.

How to Implement
Use descriptive link text to differentiate hyperlinks. For repeated link text like *Read More*, implement an invisible css class that will provide more information to screen readers and user agents. This technique is described on WebAIM’s Invisible Content guide.

Structure

Heading structure is logical

Required

What it Means
Headings are ordered by importance, with H1 being the most important and H6 being the least important. Screen readers and other user agents can build an accessible table of contents from important elements like headings. When a more important heading is inside content that is located under a less important heading, that table of contents will not be clear.

Why it Matters
Elements like headings create a visible hierarchy of information on a page. That relationship in the structure of information should also be available to software that reads the page.

Heading structure includes an H1 tag and does not skip levels

Strongly Recommended

What it Means
Include an H1 heading on a page whenever possible, and do not skip levels between headings.

Why it Matters
Skipping heading levels can be confusing to people using screen readers.

How to Implement
Instruct content creators to include an H1 heading to define their content, or leverage a content management system to add the title of the content on the page as an H1 heading. Instruct content creators on the proper use of headings, including not skipping levels. Ensure that the styles for headings are not problematic in a way that would discourage their use.

Reading order is logical and intuitive

Required

What it Means
When moving through a page, the order in which content appears should be logical, meaning it follows the visual flow of the page: left to right, top to bottom - header followed by the global navigation, then page navigation, then content body, then footer.

Why it Matters
Content that is not in a logical reading order may confuse or disorient users.

How to Implement
Structure your underlying source code so that the reading order is correct. Instructions and examples are available on the meaningful sequence page from the W3C.

Note: Focus/tab order is a positive effect of proper reading order, but does not necessarily indicate reading order. Tab order can be manually set even when a page doesn't linearize properly.

Information and relationships that are implied by visual or auditory formatting are conveyed in accessible ways.

Strongly Recommended

What it Means
When visual or auditory information helps establish structure or relationships, that information can be programmatically determined (meaning it can be understood by screen readers and other user agents).

Why it Matters
The structure and data relationships in content are often conveyed using cues such as headings, spacing, bullets, rows and columns, style, and audible cues. If the structure and data relationships cannot be determined by assistive technology, then the information conveyed by those cues is not available to everyone.

How to Implement
Use semantic markup and/or WIA-ARIA attributes as a supplement to visual and auditory information and relationships. Inform content creators of proper use of headings, style, and other semantic markup relevant to the content they create.

An extensive list of techniques are available in WCAG 2.0's Info & Relationships guide.

Notes on Testing
Manual Testing: confirm that visual and auditory information is conveyed using proper semantic markup.

Keyboard/Navigation

Provide a method to skip repetitive navigation

Required

What it Means
If navigation or other content that is repeated on multiple pages must be tabbed through in order to reach other content, a mechanism is place to skip the repeated content.

Why it Matters
Users who navigate using a keyboard, screen reader, or other user agent cannot ignore repeated content. Without a way to skip repeated content, a user browsing via a keyboard, screen reader, or other user agent will have to pass through the repeated content on every page. This adds a significant amount of time and frustration to browsing.

How to Implement
Instructions are available on WebAIM's "Skip Navigation" Links guide. The most common implementation of this requirement is a skip navigation link located at the beginning of every page where a repeated navigation section occurs.

Notes on Testing
Ensure that the primary content of a page can be accessed with a keyboard or screen reader without passing through the repeated content.

All links are available using the keyboard

Required

What it Means
Every visible link should be reachable and openable using just a keyboard.

Why it Matters
If links can only be launched using a mouse, they will not be available to people using other user agents, such as a keyboard.

How to Implement
By default, all <a> links have tab stops in HTML. Ensure that markup does not intentionally or incidentally prevent links from receiving focus or launching when using a keyboard. Do not use Javascript to improperly emulate links.

Notes on Testing
Test that nothing prevents links can be opened as a result of keyboard navigation.

There are no "keyboard traps"

Required

What it Means
A keyboard trap occurs when a user can get into a component or element on a web page by using the keyboard but cannot get out of that component or element through the use of the keyboard.

Why it Matters
Keyboard traps may prevent people who use a keyboard from accessing and interacting with some of the content on a page.

How to Implement
See instructions on ensuring that users are not trapped in content.

Notes on Testing

1. Tab through content from start to finish.
2. Check to see that keyboard focus is not trapped in any of the content.
3. If keyboard focus appears to be trapped in any of the content, check that help information is available explaining how to exit the content and can be accessed via the keyboard.

Be wary of third party widgets, especially social media widgets which often contain keyboard traps.

The tabbing order is logical

Required

What it Means
The order in which elements receive focus from tabbing sensibly matches the reading order and relationship of content on the page.

Why it Matters
People navigating the content using a keyboard or screen reader may not be presented content in a sensible order if the tab order does not match the normal reading order.

How to Implement
Wherever possible, linearize content so that the default tab order matches the reading order. When that option is not optimal, use the tabindex attribute to match the tab order to the reading order.

Keyboard focus is visible

Required

What it Means
Keyboard focus is the area or element on the screen that will respond to keyboard input. Making keyboard focus visible will allow a keyboard issues to tell where they are on a page.

Why it Matters
When keyboard focus is not visible, navigating a web page using just the keyboard can be very difficult.

How to Implement
Minimally, do not override the browsers' default focus indicator. Consider using CSS to enhance focus by adding a background color or other visual style to links and other elements that receive keyboard focus.

Notes on Testing
Using just the keyboard, try using the Tab key to navigate through the page. You should be able to tell where you are at all times.

Presentation, layout, and navigation are consistent for repeated content

Strongly Recommended

What it Means
The experience of navigating different pages on website should be consistent if content is repeated.

Why it Matters
Everyone benefits from consistency in navigation. Individuals with low vision who use screen magnification to display a small portion of the screen at a time often use visual cues and page boundaries to quickly locate repeated content. Presenting repeated content in the same order is also important for visual users who use spatial memory or visual cues within the design to locate repeated content. People who utilize screen readers can skip to the content they need more quickly if the same series of actions has the same effect across pages with repeated content.

The option to skip links is the first option when tabbing

Strongly Recommended

What it Means
A mechanism must be available to bypass repeated blocks of content. Ideally, this option should be the first tab stop.

Why it Matters
Users who navigate using a keyboard, screen reader, or other user agent cannot ignore repeated content. If the option to skip to the main content is the first option when tabbing, those users can consistently and quickly reach the main content of a page.

How to Implement
Instructions are available on WebAIM's "Skip Navigation" Links guide. Either include the Skip Navigation option as the natural first tab stop, or use the html tabindex attribute to manually set it. Note: it is encouraged but not required that the skip navigation link be visible even when it does not have focus.

Notes on Testing
Confirm that the first tab stop on a page is the mechanism to skip the repeated content.

Labels/Titles

All form controls are properly labeled

Required

What it Means
All fields in a form are paired with a label that is properly associated with the field.

Why it Matters
If a field has a visible label that is not properly associated with it, user agents like screen readers cannot properly describe the purpose of the field.

If the purpose of a field is implied visually, it is important to add an invisible label to convey that information for everyone.

How to Implement
When using the <label> element, use the *for* or *aria-labelledby* attribute to connect the label to the field.

For more implementation techniques, visit WebAIM's guide for form controls.

All tables are properly labeled with headers

Required

What it Means
When a table includes data, it typically includes headers for columns and/or rows. Those headers are necessary, and must be marked up in a way that makes the labels accessible to screen readers and other user agents.

Why it Matters
Data tables can be difficult or impossible to understand without access to the corresponding headers.

How to Implement
Use <th> elements instead of <tr> elements to indicate table headers. Include scope="row" or scope="col" for complex header structures. If <th> elements cannot be used, add WAI-ARIA markup including *columnheader* and *rowheader* roles to indicate headers.

Frames and iFrames have appropriate titles

Strongly Recommended

What it Means
When the <frame> or <iframe> attribute is used, it should include a title attribute to describe its contents.

Why it Matters

Frame titles allow web developers to convey the purpose of a frame to screen readers. Frame titles should be succinct and descriptive. The use iFrames has become a popular way to embed web content. In general, iFrames are accessible to a screen reader, but a Title for the iFrame is recommended. Titles allow screen reader users to pull up a list of iframes and identify the content or purpose based on its title. Without a meaningful title, a screen reader user may just hear "frame", the file name, or the path of the iframe.

How to Implement

Use the Title attribute of the frame or iFrame elements to describe the contents of each frame. This is especially important if the frame element includes a significant amount of content. Note: the frame element is not valid in HTML5.

Miscellaneous

The page is readable and functional when text size is doubled

Required

What it Means
Text can be resized up to 200% without assistive technology without the loss of content or functionality. Text should not be clipped, truncated or obscured.

Why it Matters
Helps people with mild visual disabilities to increase text size on content so they can read it.

How to Implement
WCAG provides techniques to ensure that text can be resized without loss of content. When using other applications to deliver content, ensure the application properly supports text resizing up to 200%.

The language of the page is identified using the HTML lang attribute

Required

Why it Matters
The HTML lang attribute helps search engines return language specific results, and it is also used by screen readers that switch language profiles to provide the correct accent and pronunciation.

How to Implement
Identify the language of every page by including the lang attribute in the HTML element. <html lang="en"> indicates that an entire page is in English unless the lang attribute is changed for a portion of the content.

Instructions do not rely solely on size, shape, color, or visual location

Required

Why it Matters
Sensory information is valuable to many viewers, but does not serve everyone adequately.

How to Implement
Supplement sensory information with text-based information. “Use the green ‘Next Step’ button to continue” includes helpful sensory information as well as accessible text-based information.

No content flashes more than 3 times per second

Required

Why it Matters
Some people are susceptible to seizures caused by strobing, flickering, or flashing effects.

How to Implement
See the W3C guide on understanding three flashes.

Notes on Testing
Manually review to confirm that no content flashed more than 3 times per second. In addition, the University of Maryland has created the Photosensitive Epilepsy Analysis Tool (PEAT) which is a free, downloadable resource for developers to identify seizure risks in their web content and software. See http://trace.umd.edu/peat.

If a page has a timing, the user is given options to turn off, adjust or extend the timing

Required

What it Means
If page is available for a limited amount of time—such as in a carousel that automatically advances—options are available to give people more time when it is needed.

Why it Matters
People with disabilities such as blindness, low vision, dexterity impairments, and cognitive limitations may require more time to read content or to perform functions such as filling out online forms. If web functions are time-dependent, it will be difficult for some users to perform the required action before a time limit occurs.

How to Implement
Techniques and failures are described on the WCAG 2.0 Timing Adjustable guide.

The page has a descriptive page title

Strongly Recommended

What it Means
All HTML and XHTML documents, including those in individual frames in a frameset, have a title element in the head section that defines in a simple phrase the purpose of the document.

Why it Matters
Descriptive page titles help users find content, orient themselves within it, and navigate through it. Descriptive page titles help users to orient themselves within the site quickly without having to search for orientation information in the body of the page.

How to Implement

The title of each Web page should:

- Identify the subject of the Web page

- Make sense when read out of context, for example by a screen reader or in a site map or list of search results
- Be short

It may also be helpful for the title to

- Identify the site or other resource to which the Web page belongs
- Be unique within the site or other resource to which the Web page belongs

Every page contains a link to an accessibility statement that provides contact information to get help if needed

Strongly Recommended

Why it Matters
An accessibility statement serves to important functions. First, it confirms a commitment to accessibility and signals compliance with the appropriate laws and regulations. Secondly, it provides a way for people with disabilities a way to communicate any problems they have encountered and get the help they need.

How to Implement
For more information on accessibility statements, see:

- The Importance of an Accessibility Statement
- Accessibility Statement Template

Multiple ways are available to find other web pages on the site

Strongly Recommended

What it Means
In order to address the diverse needs of all users, multiple means should be provided for finding content on your website. Some people prefer search, others prefer navigation menus, and others prefer site maps. For some users the choice might be dictated by a particular method's ease of use.

Why it Matters
Some users might find that it's easier to use search than to operate a dropdown menu.

How to Implement
In addition to navigation, provide additional ways to find content including search and a site map.

When appropriate, the language of sections of content that are in different languages are identified, for example, by using the lang attribute

Strongly Recommended

Why it Matters

The *lang* attribute is the only way that the language of content can be programmatically determined. Without identifying changes in language, mechanisms such as screen readers and spell checkers may not properly handle the text.

How to Implement

Any time language changes in a webpage, indicate the change using the *lang* attribute. For content created by end-users, either provide a mechanism for designating the language, or allow the user to access the HTML to add the lang attribute as needed.