# WEB ACCESS BILLY

What is **WEB** Accessibility?

Accessibility Guidelines

for Online Course Content

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How to Make Accessible POWERPOINTs

(Versions 2010, 2011 & 2013)

How to Make Accessible

WORD Documents

(Versions 2010, 2011 & 2013)

How to Make Accessible PDFs

Video & Audio

Closed Captions & Transcripts

Math & Science Content

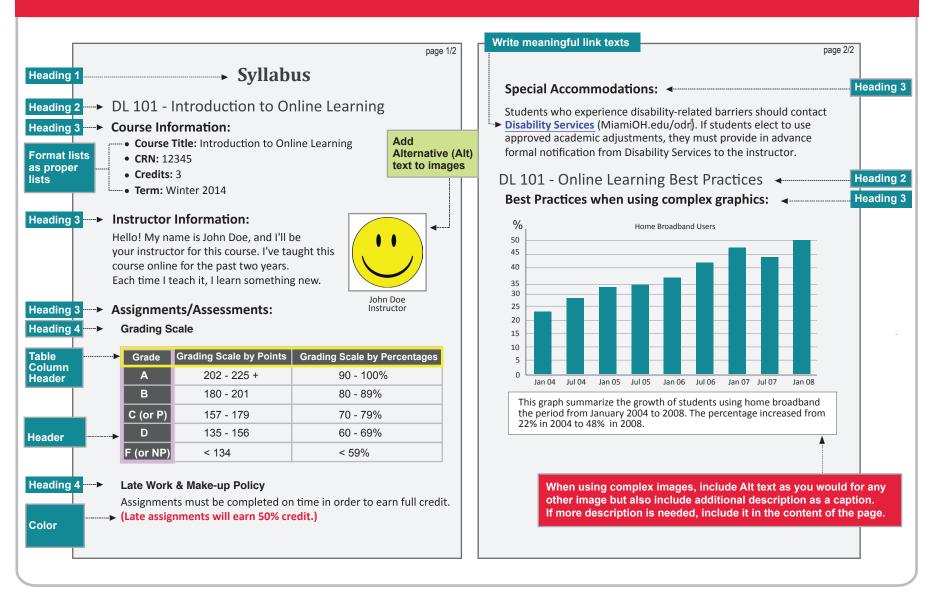
Publishers'
Online

Materials

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### The Anatomy of an Accessible Page



## WEB Accessibility at Miami



#### **Web Accessibility**

Adhering to web accessibility guidelines while developing your online course will benefit all students including those with visual, hearing, mobility and learning disabilities.

\* Web Content Accessibility Guidelines 2.0, W3C World Wide Web Consortium Recommendation 12 Month Year (http://www.w3.org/TR/2008/REC-WCAG20-20081211/, Latest version at http://www.w3.org/TR/WCAG20/)

#### **Required by Federal Law**

"Requiring use of an emerging technology in a classroom environment when the technology is inaccessible to an entire population of individuals with disabilities... is discrimination prohibited by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973 (Section 504) unless those individuals are provided accommodations or modifications that permit them to receive all the educational benefits provided by the technology in an equally effective and equally integrated manner."

Source: 6/29/2010

Dear Colleague letter sent to every college and university president http://www2.ed.gov/about/offices/list/ocr/letters/colleague-20100629.html

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## WEB Accessibility Guidelines



Co	omponent	Guideline	Why Is This Important?
Heading 1 Heading 2 Heading 3	Headings	Use properly formatted headings to structure a page.	Headings help organize your content, making it easier for everyone to read. Headings are a primary way to navigate pages using screen reading software.
• List 1 • List 2 • List 3	Lists	Format lists as proper lists.	When typing a list, use the proper tools to make a list. Properly formatted numbered lists and bulleted lists are accessible.
Link	Links	Write meaningful link text.	Links embedded in text should describe the link's destination. It helps users navigate the page more quickly.
Table Header			<ul> <li>Why Column Headers in a Data Table are Important         Table headers are essential to understanding how the information is organized.     </li> <li>Why the Reading Order in a Table is Important         Screen readers read tables from left to right, top to bottom, one cell at a time (&amp; only once). If cells are split or merged, check the reading order.     </li> </ul>
Color Contrast	Color	<ul><li>Use sufficient color contrast.</li><li>Don't use color alone to convey meaning.</li></ul>	Without sufficient color contrast between font and background, people who are color blind and low vision will not benefit from the information. And using color alone to convey meaning will leave those who are color blind or blind unable to interpret the meaning.
	Keyboard Accessibility	Ensure that any action that uses a mouse, can also be completed using only the keyboard.	Mobility and visual disabilities often prevent people from using a mouse. If content is not keyboard accessible, it will limit many people's opportunities to learn from the content.
ALT	Image ALT text	Provide alternative (Alt) text descriptions for images.	Alt text is read by a screen reader. It should adequately describe what is being displayed and why it's important. This allows screen reader users to benefit from the information being conveyed by the image, even if they cannot see it.

### **WEB Accessibility Guidelines**



Con	nponent	Guideline	Why Is This Important?
	Navigation	Design clear and consistent navigation.	Clear and consistent navigation in your course will allow students to focus on your content rather than on how to find it.
	Blinking Limit	Eliminate or limit blinking / flashing content to 3 seconds.	Blinking content is not only distracting it can cause seizures in persons with a photosensitive disorder.
	Forms	Label form fields and buttons clearly, and ensure a proper reading order in a form.	■ Why the reading order of a form is important Using the tab key, your cursor should follow through the form in the same order it is intended to be completed.
			<ul> <li>Why labeling buttons and form fields is important         A screen reader will identify the field by reading the label. It should adequately describe what should be filled in.     </li> </ul>
	Caption Video	Provide captions or transcripts for video that you or Miami produced, if it will be used for more than one term.	Video captions benefit everyone. Captions are essential for deaf and hard of hearing viewers. They also assist non-native English speakers who can read along while listening. ( <b>Note:</b> Videos should have a keyboard accessible player.)
(4)))	Transcribe Audio	Provide a transcript for audio that you or Miami produced, if it will be used for more than one term	Audio transcripts benefit everyone. They are essential for the deaf and hard of hearing and they assist non-native English speakers who can read along while listening.
	Required Software	Require only accessible software & applications.	Inaccessible software and applications will shut students with disabilities out.  Ask the software developer for a VPAT (Voluntary Product Accessibility Template) to help determine the product's accessibility.
	Math & Science	Write math and science equations accessibly.	Use an accessible equation editor to write scientific notations, equations and formulas. This will allow screen readers to read equations properly.







## How to Make Accessible Power Points



Component	Best Practices	How to Make it Accessible
Outline View  (The outline view is often preferred by students with visual impairments.)	<ul> <li>Check the outline view.</li> <li>Compose your outline in the outline view, and then move to the slide view to add images and design.</li> </ul>	<ol> <li>Click on View tab in the Presentation Views group (Mac: View menu.)</li> <li>Choose Normal (PowerPoint 2013: click on Outline View instead of Normal button.)</li> <li>In the Outline panel, make sure all text from the slides appears in the Outline View.</li> </ol>
Slide Layout  (To help your slide's reading order remain intact.)	Use the PowerPoint provided slide layouts when building slides.	From <b>Home</b> tab, choose the <b>New Slide</b> drop down menu and select a slide template.
Reading Order	Check the slide's reading order.  Output  Description:	<ol> <li>Click on the slide without selecting any of the content placeholders.</li> <li>Using the keyboard, tab through the slide. This is the reading order of the slide (meaning that is the order a screen reader will read the content.)</li> </ol>
(To help an assistive technology user navigate a slide in the correct order.)	■ Change the reading order.	<ol> <li>On the Home tab, click on Arrange and choose Selection Pane         (Reorder Objects for Mac - MS PowerPoint 2011.)</li> <li>Tab through the slide and the corresponding element will highlight.</li> <li>On the Selection Pane, click arrow up and down icon (On Mac, drag layers) to re-arrange the reading order, reading order begins at the bottom and moves to the top (On Mac, highest number is read first.)</li> </ol>
Images, Clipart, Shapes	Add alternative (Alt) text to images and shapes.	<ol> <li>Right click on the image and select Format Picture.</li> <li>Select Alt Text on the sidebar (PowerPoint 2013: click the icon to open Alt text field.)</li> <li>Enter appropriate alt text in the Description field (not the Title field.)</li> </ol>
Lists	<ul> <li>Format a list as a list using Numbering or Bullets lists.</li> </ul>	Click on the <b>Home</b> tab. In the <b>Paragraph</b> group, select the <b>Numbering</b> or <b>Bullets</b> icon.  Use <b>Numbering lists</b> if a sequential order is important to the list.  Use <b>Bullets lists</b> if all items are of equal value.



#### **How to Make**

### **Accessible Power Points**



Component	Best Practices	How to Make it Accessible
Links	<ul> <li>Create a meaningful link that describes its destination.</li> </ul>	<ol> <li>Type out text that describes the destination of the link. For example: Miami Homepage.</li> <li>Select the text, right click and choose Hyperlink from the menu.</li> <li>The Insert Hyperlink window will open. Enter a complete URL address in the Address field (Mac - PowerPoint 2011: Link to field.) For example: http://MiamiOH.edu.</li> <li>Click the OK button to save the link.</li> </ol>
Tables	<ul> <li>Indicate column headers for data tables.</li> <li>Note: You cannot create row headers in MS Word and PowerPoint.</li> </ul>	<ol> <li>Place the cursor in the top row of your data table.</li> <li>Click on the <b>Design</b> tab under <b>Table Tools</b> (Mac - PowerPoint 2011: <b>Table</b> tab.)</li> <li>In the <b>Table Style Options</b> group, select the <b>Header Row</b> check box.</li> <li>Now the cells in the top row of your table make up the headers for the columns.</li> </ol>
	Check the reading order.	<ul> <li>The screen reader reads a table from left to right, and top to bottom (never repeating a cell.)</li> <li>Merged, nested, and split cells may change the reading order of a table.</li> <li>Make sure you construct your table in a way that accommodates a good reading order.</li> </ul>
Color	<ul><li>Use sufficient color contrast.</li></ul>	<ul> <li>Make sure there is enough color contrast between the text and background colors.</li> <li>Without sufficient color contrast, people who are low-vision and color blind will not benefit from the information.</li> </ul>
	■ Don't use color alone to convey meaning.	Don't use color alone to make a distinction, a comparison or to set something off or apart from the rest of the document. If you categorize something by color alone, those who are color blind or blind will not be able to benefit from the information.
Math & Science	■ Math cannot be written accessibly in PowerPoint.	
Video & Audio	■ Link out to media.	Provide captions or a transcript for video that you or Miami produced, if it will be used for more than one term. Make sure the video player is keyboard accessible.



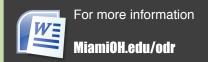


## How to Make Accessible Word Documents



Component	Best Practices	How to Make it Accessible
Headings	Properly format headings.	<ol> <li>Select the text that you want to make into a heading.</li> <li>Go to the <b>Home</b> tab.</li> <li>Choose the appropriate heading level from the <b>Styles</b> group.</li> </ol>
	<ul> <li>Use headings in the correct order.</li> </ul>	<ul> <li>The Heading 1 should only be used ONCE per page. Heading 2, 3, etc. can be used multiple times.</li> <li>DO NOT skip heading levels.</li> </ul>
Images	<ul> <li>Add alternative (Alt) text to images.</li> </ul>	<ol> <li>Right click on the image, and select Format Picture</li> <li>The Format Picture window will open.</li> <li>Select Alt text (Word 2013: select the icon. Then click on to expand Alt text.)</li> <li>Enter your image description in the Description field (Not in the Title field.)</li> </ol>
Lists	<ul> <li>Format a list as a list using Numbering or Bullets lists.</li> </ul>	<ol> <li>Select the text that you want to make into a list.</li> <li>On the <b>Home</b> tab, in the <b>Paragraph</b> group, select the <b>Bullets</b> or <b>Numbering</b> icon.</li> </ol>
Links	<ul> <li>Create a meaningful link that describes its destination.</li> </ul>	<ol> <li>Type out text that describes the destination of the link. For example: PCC Homepage.</li> <li>Select the text, right click and choose Hyperlink from the menu.</li> <li>The Insert Hyperlink window will open. Enter a complete URL address in the Address field (Mac - Word 2011: Link to field.) For example: http://MiamiOH.edu.</li> <li>Click the OK button to save the link.</li> </ol>
Math & Science	<ul> <li>Use MathType         <ul> <li>(a MS Office plug-in)</li> <li>to write equations.</li> </ul> </li> </ul>	<ul> <li>Use the MathType plugin http://www.dessci.com/en/ for MS Word to create math and science equations, formulas and notations. DO NOT use Microsoft's equation editor.</li> <li>For LibreOffice, just use the native equation editor which easily converts to an accessible format.</li> </ul>

## How to Make Accessible Word Documents For more information of the maniement of the manieme



Component	Best Practices	How to Make it Accessible
Tables	Indicate column headers for data tables.	<ol> <li>Place the cursor in the top row of your data table.</li> <li>Click on the <b>Design</b> tab under <b>Table Tools</b> (<b>Table</b> tab on Mac - Word 2011.)</li> <li>In the <b>Table Style Options</b> group, select the <b>Header Row</b> check box.</li> <li>Click on the <b>Layout</b> tab under <b>Table Tools</b> (<b>Table Layout</b> tab on Mac - Word 2011.)</li> <li>Click the <b>Repeat Header Row</b> button. This will indicate the top row as the table's header.</li> </ol>
	■ Check the reading order.	<ul> <li>The screen reader reads a table from left to right, and top to bottom (never repeating a cell.)</li> <li>Merged, nested, and split cells may change the reading order of a table.</li> <li>Make sure you construct your table in a way that accommodates a good reading order.</li> </ul>
Color	Use sufficient color contrast.	<ul> <li>Make sure there is enough color contrast between the font and its background colors.</li> <li>Without sufficient color contrast, people who are low-vision and color blind will not benefit from the information.</li> </ul>
	Don't use color alone to convey meaning.	Don't use color alone to make a distinction, a comparison or to set something off or apart from the rest of the document. If you categorize something by color alone, those who are color blind or blind will not be able to benefit from the information.
Forms	<ul><li>Label form fields and buttons.</li></ul>	<ul> <li>Use real text labels or alternative text when creating buttons and form fields.</li> <li>Use a form template to create a form.</li> </ul>
	Check the reading order of forms.	<ul> <li>To check, press the tab key repeatedly to replicate the order a screen reader would navigate through the form. If it doesn't land on the form fields in the correct order, you will need to edit the form.</li> <li>The tab order (or reading order) is important to those who are blind or physically disabled.</li> </ul>

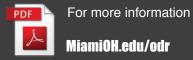






#### **How to Make**

### AccessiblePDFs



2 Ways to create a PDF	Software / Hardware	How to Make it Accessible
Convert MS Office to an Accessible PDF document	■ Microsoft Office 2010	<ol> <li>Start with a well-structured word document or presentation.</li> <li>Click the File tab and select Save as. In the Save as type field, select PDF (*.pdf.)</li> <li>Enter a file name in the File name field.</li> <li>Click on the Options button and make sure the Document structure tags for accessibility and Create bookmarks using Headings checkboxes are checked.</li> <li>Click OK and Save. This will tag all of the text formatting so page headings and lists are correctly interpreted by a screen reader.</li> </ol>
	■ MS Office 2011 (for Mac)	<ul> <li>Microsoft Word &amp; PowerPoint 2011 for the Mac cannot produce a fully accessible PDF.</li> <li>Go to http://MiamiOH.edu/alt/accessibility for options on how to create an accessible PDF.</li> </ul>
Scan & Create an Accessible PDF	<ul> <li>Scanner - Knowledge Imaging Center (KIC) kiosks in the library</li> </ul>	<ol> <li>Place the document on the scanner bed.</li> <li>Touch <b>Scan</b> on the interactive touch screen. Then answer the copyright notice/question.</li> <li>An image of the scanned page will be displayed on the screen.</li> <li>For multiple pages, repeat step 1 through 3.</li> <li>With the default settings, the KIC scanner will create an accessible (&amp; searchable) PDF.</li> <li>Save to USB, E-mail or Cloud.</li> </ol>
	■ Flatbed scanners in the faculty production lab	<ol> <li>Open Adobe Acrobat Pro.</li> <li>From the File menu, select Create &gt; PDF from Scanner &amp; click Autodetect Color Mode.</li> <li>Follow the instructions from the pop-up window, and select your choices.</li> <li>When done, click OK.</li> </ol>
When needed: Run Optical Character Recognition (OCR)	■ Adobe Acrobat Pro	<ol> <li>If you've already scanned your document, open your PDF file.</li> <li>Open the Tools panel (click Tools in top right) and click Recognize Text.</li> <li>Click In This File and the Edit button to adjust your OCR settings. Select the language of the text and choose Searchable Image for PDF Output Style and Downsample to 600 dpi.</li> <li>Click OK when done.</li> </ol>



## How to Make Accessible Video & Audio



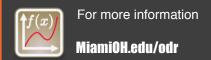
Component	Best Practices	How to Make it Accessible
Video	Provide captions or transcripts for video that you or Miami produced, if it will be used for more than one term.	We recommend these settings when you produce your video:  ■ Resolution: 640 x 480px (Standard) / 640 x 360px (Widescreen) or  800 x 600px (Standard) / 1280 x 720px (Widescreen.)  ■ Video format: mp4, mov, wmv, m4v, avi.  ■ Audio: Make sure you record in a quiet location with minimal background noise.
	<ul> <li>Caption video using YouTube.</li> </ul>	After uploading your video to YouTube, go to the following link for captioning instruction:  1. Go to http://MiamiOH.edu/alt/accessibility  2. Click on YouTube under Captioning Tools.
	<ul> <li>Caption video using Camtasia (Windows.)</li> </ul>	<ol> <li>Select the audio tracks.</li> <li>Click on Captions tab &gt; Speech-to-text button at the top.</li> <li>The Speech-to-Text window will open. Click the Continue button.         To improve accuracy, select Train your computer to understand your voice &gt; Start voice training and follow the instructions.     </li> <li>After your captions have been generated, they will appear on the top track in the timeline. Check for accuracy, if editing is needed, press the tab key to edit each line.</li> </ol>
Audio	Provide a transcript for audio that you or Miami produced, if it will be used for more than one term.	What to do when you have an audio file that needs transcription?  1. Have the audio file ready as <b>mp3</b> , <b>wav</b> , <b>aiff</b> , <b>or wma</b> format.  2. Transcribe your audio.  3. When done, save the file as a document file such as .txt, .rtf, .doc or .docx.  4. Post the transcript file along with the audio file in your course.
		Tips when transcribing an audio recording:  Headsets: Ensure that you have good quality headsets.  Quiet environment: A quiet space will help maximize your ability to hear the audio.  Spell check: Use Spelling & Grammar check on MS Word.





#### **How to Make**

### **Accessible Math & Science Content**



Component	Math Tools	Best Practices
Math & Science equations, formulas and notation	<ul><li>MathML</li></ul>	MathML stands for 'Math Markup Language' which is the standard for online math accessibility.  Typically, a user does not create MathML from source, but instead uses a conversion process to output MathML.
	■ LaTeX	LaTeX is a mark-up language. Converting LaTeX documents into an accessible format is usually straightforward as the accessible formats are also mark-up languages.
	<ul><li>MS Word + MathType</li></ul>	MathType is an equation editor created by Design Science that is compatible with MS Word for Windows. Together, MS Word with MathType can be exported as MathML or it can be converted to braille. (Save your source files.)
	■ LibreOffice	LibreOffice (with its native equation editor) converts easily to web pages that contain MathML.
	■ Graphs	There are many ways to create graphs, including Winplot, Excel, Graph, pgfplots, PSTricks, etc. Any graph or graphic, regardless of how it was created, will always be read as an image by a screen reader. As such, appropriate alt text must be included.
_	■ WeBWorK	WeBWorK has a variety of screen output options, including MathJax which can be configured (easily) to use MathML.
	■ MS PowerPoint	Math is not accessible in PowerPoint.
	■ PDF	Math is not accessible in PDF.

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## Using Publishers' Online Materials



Ask about	Questions and Considerations
The accessibility of their materials	<ul> <li>Are the videos captioned and audio recordings transcribed?         There should be transcripts for audio recordings and captions or subtitles for video. If they aren't available, ask the publishing representative if they would provide a captioned version in a timely manner if a student who needed them registered for your class.     </li> <li>Can all of the text that is displayed on the screen be read aloud by text-to-speech software?         Screen readers (assistive technology used by people who are blind) read real text. They cannot read images of text or text embedded in Flash animations/movies/simulations.     </li> <li>How accessible are the E-books?         Check to see if you can find a Document Accessibility Profile (DAP) (currently in beta) on the e-book. The goal of DAP is to make it easy to find and use accessibility information for electronic textbooks and other documents.     </li> <li>Can all interactivity (media players, quizzes, flashcards, etc.) be completed by keyboard alone (no mouse required)?         People who are blind or people who have upper mobility disabilities cannot use a mouse. They use the keyboard to navigate and interact with the Web. It is required that any interactive elements on a publisher's website (or on a DVD included with the book) be operable by a keyboard alone if they are used in your course.     </li> <li>Is there any documentation available (VPAT or White Paper for example) that confirms accessibility or usability testing results? A VPAT is a Voluntary Product Accessibility Template. It is used by many organizations to report the level of accessibility of their software products.</li> </ul>
The usability and interoperability of their materials	<ul> <li>Is your multimedia (Adobe) Flash or (Oracle) Java-based? Or Can your materials be watched on mobile devices?         Content created in Flash or Java can be inaccessible and may not run on mobile devices and tablets, which are becoming more prevalent.</li> <li>Does any software need to be installed on student or Miami computers?         If software needs to be installed on Miami computers in a particular lab, consult with that lab's coordinator.</li> <li>What are the computer requirements for using their materials? Will the materials work on mobile devices?         Distance Learning informs online students about the computer requirements for taking an online course in the Distance Education Orientation for students. If your course requirements are different, make the computer requirements known in the course syllabus.</li> <li>How will students get access to the materials?         Does it require an access code? If so, students should be aware that used books may not have the necessary access code or may have an old and unusable code.</li> <li>Can the electronic content be made available for purchase through the bookstore?         Some students would like to own the material so they have it for future reference (rather than just online during the term.)</li> </ul>



# WEB ACCESSIBILITY

## **Training & Support**

- MiamiOH.edu/alt/accessibility: Check the accessibility website for how-to instructions & video tutorials.
- IT Support Desk:

**C** 513.529.7900 | ⋈ ithelp@miamioh.edu

• Questions about online course accessibility:

**Advanced Learning Technologies:** 513.529.6068

alt@miamioh.edu

Office of Disability Resources: 513.529.1541

odr@miamioh.edu

Center for Digital Scholarship: 515.529.2871

#### **Testing Tools**

- Firefox: WAVE Toolbar http://wave.webaim.org/toolbar/
- Firefox & IE: Favelets http://jimthatcher.com/favelets/
- MS Word: Built-in 2010, 2013
- MS PowerPoint: Built-in 2010, 2013
- PDF: Built-in Adobe Acrobat Pro
- Colour Contrast Analyser

  http://www.paciellogroup.com/resources/
  contrastAnalyser

#### Websites

March 2014

- Accessibility: MiamiOH.edu/alt/accessibility
- Instructional Support: MiamiOH.edu/alt
- **Disability Services:** MiamiOH.edu/odr

Designed by: Advanced Learning Technologies
Adapted from: Portland Community College: www.pcc.edu/access

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Accessibility Guidelines Handbook. This material is designed and distributed by Advanced Learning Technologies



