

## A Dozen Tips for Faculty to Make Accessible E-Learning Courses

In Summer 2007, Kansas State University passed the Course Accessibility Standards Policy. (Course Accessibility Standards Policy F125 is located at <http://www.k-state.edu/academicpersonnel/fhbook/fhsecf.html>) This policy addresses the federal laws of the Americans with Disabilities Act and the Rehabilitation Act. It also addressed the Kansas Information Technology Policy 1210 / Web Accessibility Requirements. These are the underpinnings for the university push to make all online courses accessible—so there is equal access to course content for all students of all abilities. Varying abilities may relate to challenges with sight, hearing, touch, mobility, information processing, and others, and specifically mixed combinations of these. This tips handout addresses ten basic ways to make a course accessible. These are simple ways to create course accessibility. **Items marked with an asterisks (\*) should be considered a priority when putting content online.**

### ***1. File contents in digital files and websites should be keyboard accessible for access and navigation.***

As much as possible, all users should be able to access file contents in digital files and websites by their keyboard alone. If some contents require motion (such as into a camera) or voice commands or other methods of interaction, those may end up being barriers to users. A simple way to test this is to put away the mouse and just use the keyboard (tab key and shift + tab and ENTER to select) in order to test the navigation.

If the site interface itself is complex, it should be designed in a way to enable “learn as you go.” It should be self-explanatory within the site.

### ***2. Use course file types in universal product formats.***

Use mainline commercial products that output digital files in a universal product format. A universal product format means one that may be accessed using typical browser plug-ins or browsers with the embedded players or readers.

- Text files in the .doc, .txt, .rtf and .pdf formats are generally considered universal. (Some would suggest that .txt and .rtf are preferable since these enable access on a number of computer operating systems and with very simple software tools.)
- Image files in the .jpg or .gif for the Web are generally considered universal.
- Video files in the Windows Media (.wmv), Real Media (.rm), Quicktime (.mov), and Flash (.mp4, .swf and .flv) formats are considered universal.
- Audio files in the .wav or .mp3 are considered universal.
- HTML (hypertext markup language) is generally considered accessible; it is also platform-independent.

Some faculty may find that having files in multiple formats (.doc and .pdf, .ppt and .pdf) may make course materials much more accessible as some learners may not have readers for some file types. Offering learners options may be helpful. With the new .docx file format with the latest Microsoft Word, students may need to download a .docx converter. Ensure that the software “authoring tools” used offer options for accessibility accommodations. These programs may offer 503 accessibility standards to label images and transcribe audio and video.

### ***3. Ensure that digital files are human-accessible and machine (screen)-readable.***

Ensure that text documents are not just digital image graphics. If you use PDFs (portable document format files), you must make sure that the files also contain text. If you click on a word, you should be able to highlight that word in the document. This shows that a computer will also be able to “see” the words in that file.

PDFs of scanned documents are often graphics, which are not machine-readable or machine-interpretable. Those with close-in visual acuity may see the text, but they cannot copy and paste the text as if it is a word processing document. They are not able to use a text reader to read the file, and they are not able to apply computational processing to the text in the graphics-only PDF.

To make the text readable, use an OCR (optical character recognition) program; the “Recognize Text using OCR” option under “Documents” in the menu of Adobe Acrobat Professional may also work. Properly scanned pages should be “searchable.”

### ***4. Properly name digital documents. Structure text documents.***

Texts should be named properly, and internally, they should be logically structured.

***Files should be named descriptively (informatively).*** A learner who is perusing files in a folder should be able to locate what he or she is looking for based on the name of the file. This file, for example, is labeled “IPandAccessibility,” which indicates its contents. The file name is not non-descript. If hyperlinks are used, they should be descriptive ones, not just “link”. Acronyms should be fully defined at first usage; it may not hurt to have a reminder of acronym meanings later on past the first reference as well, particularly in longer texts. (Feedback to students should be constructive and sufficiently detailed to meet their learning needs, according to universal design in higher education principles and practices.)

***Use style tags used for text document structure and markup.*** Use tags in your Word and PDF files. These tags behave much like html tags (and XML tags) in that they create structure for the document. Tags help maintain visual differences in text files such as

headings, they also have the ability to relay this information to students using software to read the text to them, such as screen readers. For example, a student who is blind can use their software to navigate the headings just as a visual student may use bold words to scan a document. For PDF files these tags are behind the scenes but just as important. Using tags in Word documents will also make it easier to write long documents and maintain formatting. Files should be clear and uncluttered.

**\*5. Use clear, simple English.**

Write the contents in a way that is suitable for many different levels of understanding. Use the precise words that are meant, and follow the basic grammar and syntax rules of English. Avoid slang or colloquial expressions, which may be culturally-based. Avoid imprecision. (If an automated language translator is used to change between languages, please have a native speaker double- or triple-check the contents, so the information does not cause confusion or offense or both.)

**6. Label informational graphics with “alt text”.**

All informational graphics—images, photos, tables, drawings, and others—should be accompanied by alt text. This text should both contextualize and describe the graphic to convey necessary information. Decorative graphics do not require alt text descriptions. Branding logos and labeling graphics should be described in a textual way because such images embed meaning.

**7. Transcribe and label audio and video.**

Ensure that all audio and video files are accompanied by a verbatim and timed transcript. These should have occasional and accurate time stamps linked to the sound, so learners may track with the video. Optimally, video would have synchronous closed captioning. There are tools available that enable semi-automated closed captioning (such as Google’s YouTube’s automated voice-to-text transcription) and the extraction of the related transcript. Such voice-to-text transcription is not 100%; many suggest that it is closer to 60% accurate, so it’s a good idea to have a person go over any machine coding of voice-to-text.

**\*8. Make accessible PowerPoint™ slideshows.**

When using PowerPoint™, use the layouts provided. Do not create your own text boxes. Only text typed in provided layouts will be available for students using adaptive technology such as screen readers. When writing your slides make sure that you also write your text in the order you want it read. When putting files online try to also provide a text, or .rtf, version as well to increase accessibility to the information.

***\*9. Use color in an accessible way. Use labels and textual information in addition to color.***

Colors need to be sufficiently contrasted for those with low vision. Colors that do not register with those who are color blind (such as red and green) should not be used for informational purposes. Also, colors should not be used alone to differentiate between elements; rather, text, layout, and other strategies should also be brought in, so that those with visual acuity issues can still acquire the same information and learning.

If maps are used, these should be described textually as well. There should be clear labels for the different parts of the map; there should also be a legend to enable a textual reading of the contents of the map.

***10. Summarize and label data tables.***

Text readers need to be able to understand how to read tables. Because screen readers read in a serial, linearized way (straight across from top left to the bottom right), accessible informational tables require clear cell labeling. A summary of the table's layout should be explained—so those using a text reader understand the table's orientation. Row and column headers should be defined for each cell especially in larger data tables. The W3 consortium has an important resource on this in regards to using html: <http://www.w3.org/tr/html4/struct/tables.html>. Do not use tables for layout purposes (such as aligning images); rather, tables should be used generally for structured data alone.

***11. Support user control of automations and sequenced actions, as much as possible. Allow user control of time. Use time limitations reasonably and possibly even sparingly.***

Automations should be controllable by the users. Sequenced actions should not be set on a timer but directed by the users. Enable review and replay. All automated interactivity should also have some textual description for those unable to access the automated experience. This may refer to the use of immersive spaces, simulations, games, and other such interactions. Many of the technologies used to create these experiences are not accessible for those who are blind or visually impaired.

***12. Plan live, online events to be accessible.***

If there will be live guest speakers or live synchronous events--using a live virtual classroom, interactive television, voice chat or text chat—some preparation would enhance the accessibility. This may mean pre-event setup with textual script and information. This may mean soliciting ideas and participation from learners prior to the live event, which may feel more pressured to students. Post-event transcripts should be offered, so the learning value of that live event has been captured. During the event, if a textual version of

spoken speech may be made available, that would enhance the real-time accessibility. Also, if there are downloadable files, those files should be created with accessibility design in mind.

If you have students who are deaf or blind you should contact Student Access Center (SAC) to find out how you can prepare the event for accessibility. This should be done at least one month in advance.

**To summarize the 12 points:**

1. File contents in digital files and websites should be keyboard accessible for access and navigation. These should not require mouse-interactions.
2. Use course file types in universal product formats.
3. Ensure that digital files are human accessible and machine (screen)-readable.
4. Properly name digital documents. Structure text documents (hierarchically).
5. Use clear, simple English.
6. Label informational graphics with “alt text.”
7. Transcribe and label audio and video.
8. Make accessible PowerPoint™ slideshows.
9. Use color in an accessible way. Use labels in addition to color.
10. Summarize and label data tables. (Do not use tables to structure images or for other uses besides to contain information.)
11. Support user control of automations and sequenced actions, as much as possible. Allow use control of time. Use time limitations reasonably and possibly even sparingly.
12. Plan live, online events to be accessible.

These are a solid start.