



# Guide to Accessible Document & Media Design

Suffolk County Community College  
Center for Innovative Pedagogy  
2020

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# Guide to Accessible Document & Media Design

2020

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**C**reating course materials with ADA compliance in mind might seem daunting at first, but with practice, it becomes second nature. This booklet was created to guide you through the process. Word documents, PDFs, PowerPoint presentations, videos, interactive presentations and Blackboard are all discussed. The standards on these pages adhere to Web Content Accessibility Guidelines 2.1 and to Suffolk County Community College's website accessibility policy.

## **Web Content Accessibility Guidelines 2.1**

<https://www.w3.org/WAI/WCAG21/quickref/>

## **Suffolk County Community College's Website Accessibility Policy**

<https://www.sunysuffolk.edu/accessibility/website-accessibility-policy.jsp>

For more help creating accessible documents and media, please go to the *College website*→*Explore Academics*→*Online Education*→*Online Faculty*→*Accessibility*

<https://www.sunysuffolk.edu/explore-academics/online-education/faculty/accessibility.jsp>

# Documents

## Microsoft Word Documents

- Use Word's built-in formatting styles to create headings, page numbers, columns, tables, footnotes, and bulleted/numbered lists. Formatting styles help users using screen readers to navigate through a text.
- Use Styles to structure content hierarchically by heading, subheading, and paragraph.
- Use fonts that are at least 12 points in size.
- Make sure there is a 4.5 to 1 contrast ratio between the background and text colors.
- Try to limit fonts to Times New Roman, Verdana, Arial, Tahoma, Helvetica and Calibri. Standard fonts such as these are easy to read and render correctly in both Mac and Windows platforms.
- Avoid using text boxes.
- Make sure to include a header row when making a table. Test the table with a screen reader to make sure the screen reader reads the content in the correct order.
- Do not use color to relay important information. Users who are color blind or visually impaired might not be able to see or distinguish between colors.
- Include alt text for all images, graphics, charts or graphs that are informational. Screen readers read out alt text for users who are visually impaired.
- Multiple images or graphics that are meant to go together to form one object should be grouped.
- Meaningful text is used when creating hyperlinks.

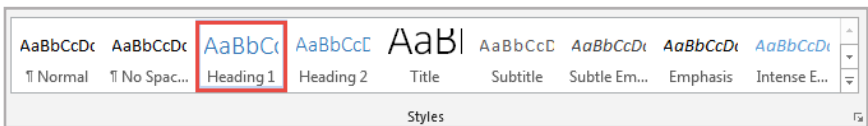
Microsoft. (n.d.). Make your Word documents accessible to people with disabilities. Retrieved 2018, from <https://support.office.com/en-us/article/make-your-word-documents-accessible-to-people-with-disabilities-d9bf3683-87ac-47ea-b91a-78dcacb3c66d?ui=en-US&rs=en-US&ad=US>

# Using Heading Styles in Microsoft Word

Instead of bolding or underlining text to indicate different sections of a document, use heading styles instead. Heading styles enable students using screen readers to jump to different parts of a document without the screen reader having to read through the entire text.

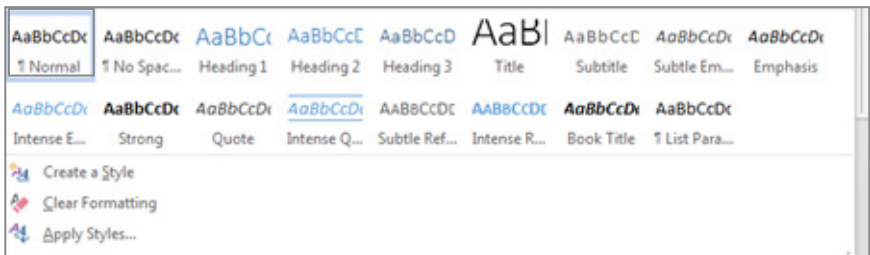
## Using Heading Styles in New Documents

1. Click the **File** tab, select **New > Blank Document**.
2. Go ahead and type your document, switching between a heading style (**Home tab > Styles**) when you type a heading and **Normal**, when you type body text.
3. You can also choose from other types of styles by expanding the **Styles** panel.

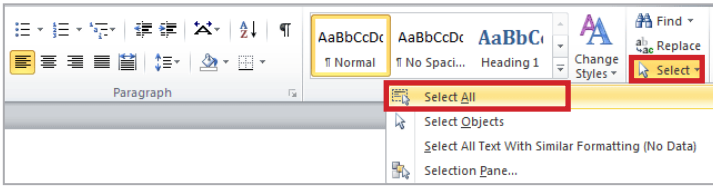


## Applying Heading Styles to Existing Documents

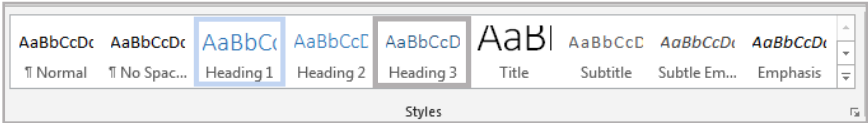
1. Open the document to which you would like to add heading styles.



2. Select all the text by choosing **Select > Select All**.

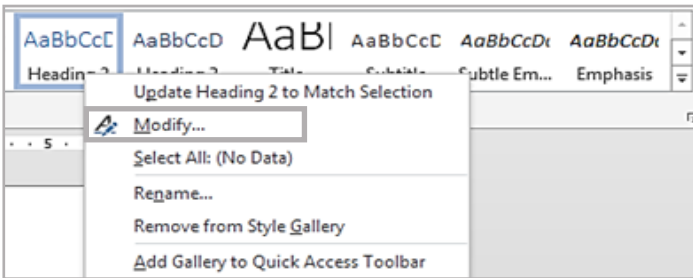


3. Select a heading style to apply to your text.



## Creating Custom Heading Styles

1. To modify a heading style, right-click the style in the Styles toolbar, then select **Modify**.



2. To create your own style, expand the **Styles** toolbar by clicking on the last arrow in the scroll bar, and select **Create a Style**.



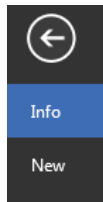
Microsoft. (n.d.). Customize or create new styles in Word. Retrieved 2018, from <https://support.office.com/en-us/article/customize-or-create-new-styles-in-word-d38d6e47-f6fc-48eb-a607-1eb120dec563>



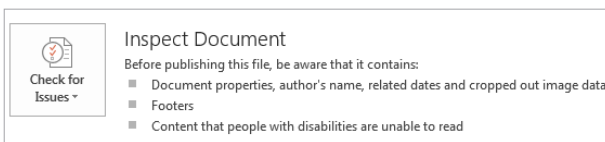
# Using the Microsoft Office Accessibility Checker

The Accessibility Checker in Word, Excel, and PowerPoint can help identify possible accessibility issues in a document. The instructions below apply to Office 2010 and above.

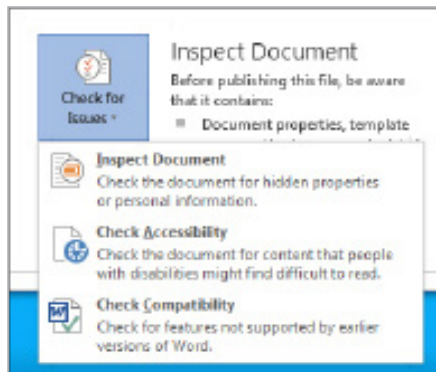
1. Open a document in Microsoft Word and go to **File > Info**.



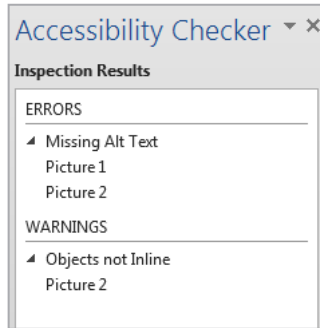
2. If the Accessibility Checker sees any potential issues, you will see a message next to the **Check for Issues** button.



3. To view and repair the issues in your file, click **Check for Issues > Check Accessibility**.



4. Your file will reappear and the Accessibility Checker task pane will show the inspection results.



5. Click a specific issue to see additional information and steps you can take to edit the content.

## Accessibility Checker Inspection Results

- Each issue is classified as an error, warning, or tip.
- An **error** is for content that makes a file very difficult or impossible for people with disabilities to understand.
- A **warning** is for content that in most, but not all, cases makes a file difficult for people with disabilities to understand.
- A **tip** is for content that people with disabilities can understand, but that might be better organized or presented in a way that would improve their experience.

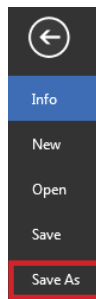
Fixing some issues might require you to change, reformat, or update your content. Accessibility Checker also lets you know about Office features you can use to make your content more accessible.

Microsoft. (n.d.). Use the Accessibility Checker to find accessibility issues. Retrieved December 12, 2018, from <https://support.office.com/en-us/article/use-the-accessibility-checker-to-find-accessibility-issues-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f>

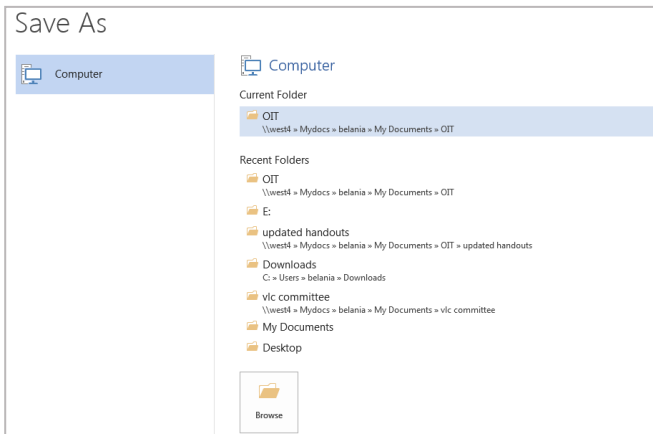
# Creating Accessible PDFs from Word Documents

When creating PDFs from Word documents, first make sure that you have followed the guidelines for Word document accessibility. Next, you will need to save the Word document as a tagged PDF. These directions will explain how this is done.

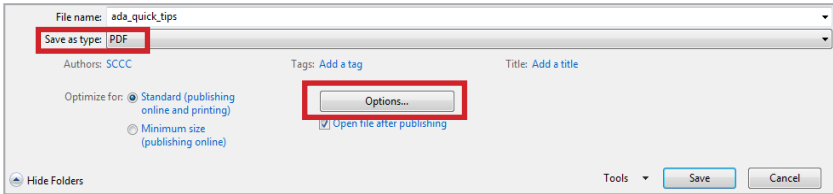
1. Click the **File** tab and then click **Save As**.



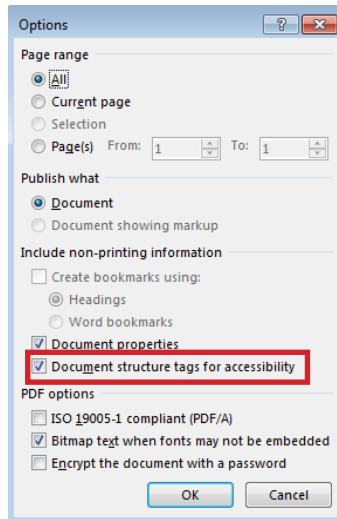
2. Under **Choose a Location**, choose where you want the file to be saved.



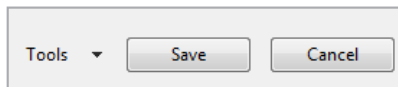
3. In the **Save As** dialog box, click the arrow in the **Save as type** list and then choose **PDF**. Next, select **Options**.



4. Make sure that the **Document structure tags for accessibility** check box is selected, then click **OK**.



5. Click **Save**.

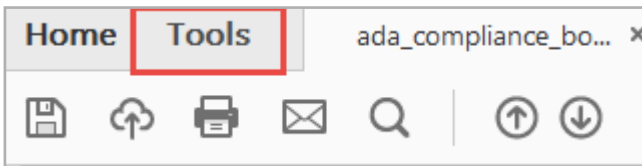


Microsoft. (n.d.). Create accessible PDFs. Retrieved 2018, from <https://support.office.com/en-us/article/Create-accessible-PDFs-064625E0-56EA-4E16-AD71-3AA33BB4B7ED>

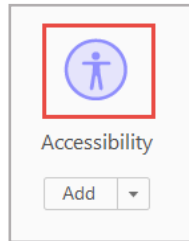
# PDFs

Acrobat Pro has tools to check for and correct accessibility issues in PDF documents.

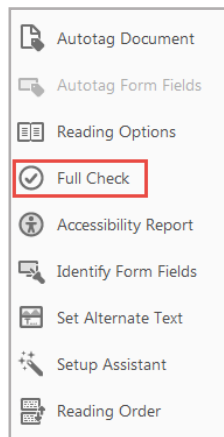
1. Open the PDF document in Acrobat Pro, then click on **Tools**.



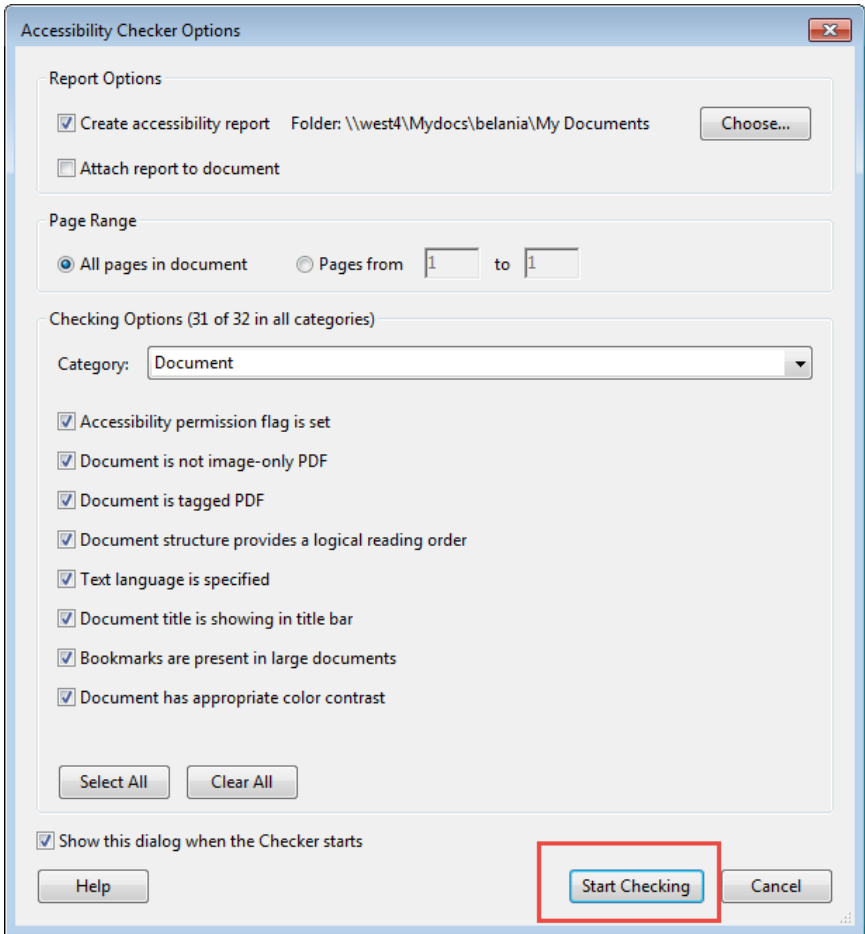
2. Scroll down and then click on **Accessibility**.



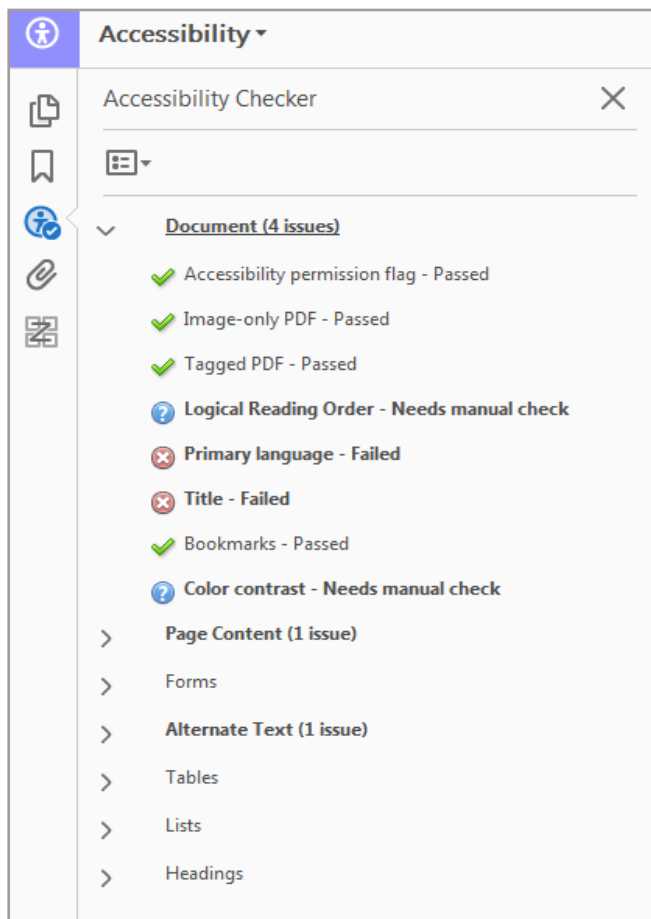
3. Click on **Full Check**.



4. In the **Accessibility Checker Options** dialog box, select the options as shown below, or select or deselect options per your specific need. When you are done, click on **Start Checking**.



5. As shown on the following page, a list of which accessibility requirements your document has passed and failed will be generated. Click on each title to expand the content and follow the instructions.



Adobe. (n.d.). Using the Acrobat Pro accessibility checker. Retrieved 2018, from <https://www.adobe.com/accessibility/products/acrobat/using-acrobat-pro-accessibility-checker.html>

# PowerPoint Presentations

When creating accessible PowerPoint presentations, establishing the correct reading order of elements on the slides is of utmost importance. Follow the tips below to ensure that your slides are ADA compliant.

- Use PowerPoint's preset slide layouts instead of inserting text boxes and media manually. The preset slide layouts ensure that the content is arranged in reading order.

*Please note: Text boxes may be used; however, they must be inserted into the slide in reading order. To make sure the reading order is correct, check the order of the text boxes (or any other elements) in the Selection panel. Elements can be reordered within this panel*

- Use a sans serif font no smaller than 18 points.
- Make sure there is a 4.5 to 1 contrast ratio between the text color and background.
- Do not use blinking or flashing animations.
- Apply alt text to any essential images or graphics.
- Hyperlink text should be descriptive of the website the hyperlink leads to.
- Do not set embedded videos to autoplay.

Microsoft. (n.d.). Make your PowerPoint presentations accessible. Retrieved 2018, from <https://support.office.com/en-us/article/make-your-powerpoint-presentations-accessible-6f7772b2-2f33-4bd2-8ca7-dae3b2b3ef25>



# Videos

In order for a video to be ADA compliant, it must contain captions or a transcript, and if needed, audio description (see page 20).

## General Captioning Standards

- Each caption frame should hold 1 to 3 lines of text at a time, viewable for a duration of 3 to 7 seconds.
- Each line should not exceed 32 characters.
- Each caption frame should be replaced by another caption.
- All caption frames should be precisely time-synced to the audio.
- A caption frame should be repositioned if it obscures on screen text or other essential visual elements.
- When multiple speakers are present, each speaker must be indicated.
- Both upper and lowercase letters should be used.
- The font should be sans-serif, such as Arial or Verdana.
- Caption color should contrast with the background color at a 4.5 to 1 ratio so that the text is easily readable.
- Non-speech sounds like [MUSIC] or [LAUGHTER] should be added in square brackets.
- Punctuation should be used for maximum clarity in the text, not necessarily for textbook style.
- Captions should preserve and identify slang or accents.

Murphy, S. K. (2018, January). The ADA and online video captioning standards. Retrieved June 6, 2018, from <http://www.3playmedia.com/2013/09/27/the-ada-online-video-captioning-standards/>

# Searching for Closed Captioned Videos on YouTube

YouTube contains a wealth of educational content, however, the auto-captioning built into each video may not be accurate. To find videos on YouTube that were captioned manually by the content creator, use the directions below. *Please note: Currently, YouTube does not have audio description (see page 20) capability. Keep this in mind when choosing videos to use for your courses.*

1. Enter your keywords in the YouTube search text box and click on the **Search** button.

Veterinary cardiology

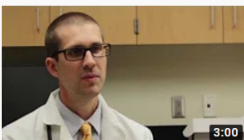


2. On the results page, click on the **Filters** button and then click on **Subtitles/CC**.

FILTER

UPLOAD DATE	TYPE	DURATION	FEATURES	SORT BY
Last hour	Video	Short (< 4 minutes)	Live	<b>Relevance</b>
Today	Channel	Long (> 20 minutes)	4K	Upload date
This week	Playlist		HD	View count
This month	Movie		<b>Subtitles/CC</b> ×	Rating
This year	Show		Creative Commons	

3. A list of ADA compliant videos will be displayed. You can tell if a YouTube video is compliant if the video has "CC" under the video description. Outside of the search listing, videos with **CC** (with an underline under it) in the video player indicate videos with manually inputted captions.



Auburn University Cardiology Residency Program

AuburnVetMed • 1K views • 3 years ago

Auburn University College of Veterinary Medicine now has it's own Cardiology Residency Program. Dr. Daniel Newhard, DVM, ...

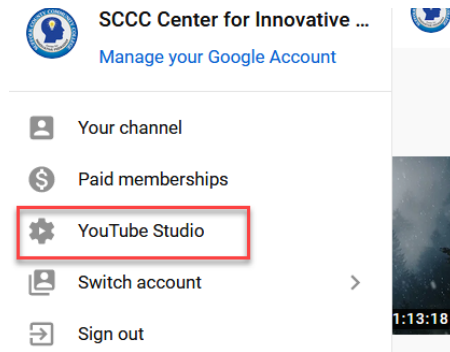
**cc**



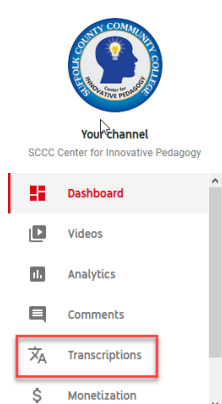
# Using YouTube to Create Captions

YouTube can be used to create captions for existing videos. Even if you don't want to host the videos on YouTube, you can download the caption files for use in other applications, such as Camtasia. You will need to create a YouTube account, or, if you have a Gmail account, you can use the YouTube account associated with it.

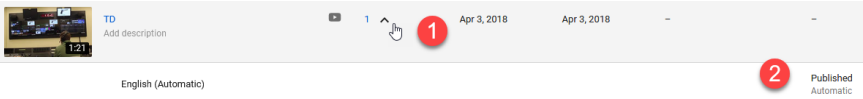
1. Log into your YouTube channel. Click on the round profile avatar at the top right of the page and then click on **YouTube Studio**.



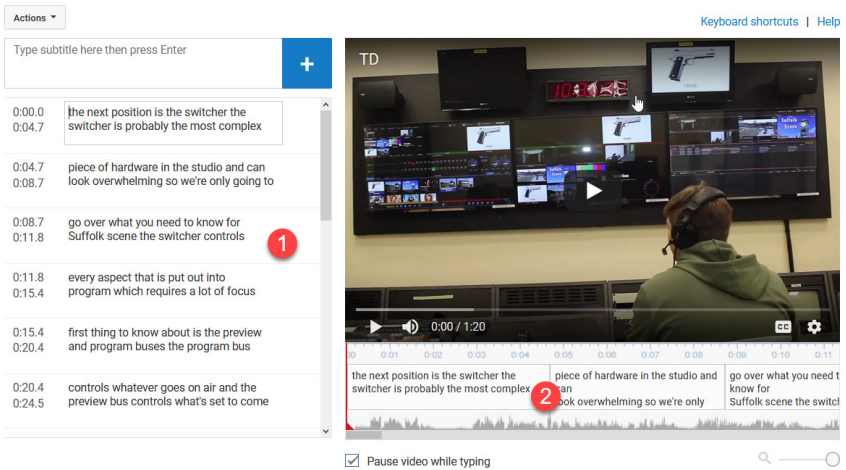
2. Next, click on Transcriptions on the left pane.



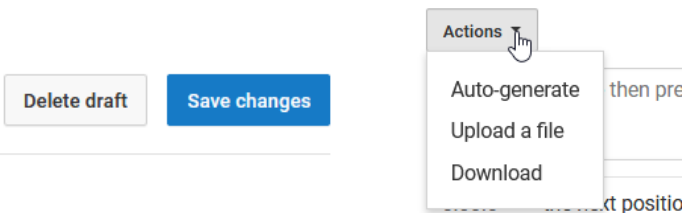
- Find your video on the list and click on the down arrow next to the number **1**. The number 1 refers to the captions that YouTube automatically generated. Then, click on **Published Automatic**.



- The caption editing window will open. You'll see the captions greyed out on the left side of the page. To edit them, click on **Edit** in the upper right. You'll then see that the captions will become editable. Make your edits by writing in the caption fields (1) and adjusting the timing according to the waveform underneath the video preview (2) window.



- To save your changes and publish the video with the edited captions, click on **Save changes**. To download the caption file, click on **Actions**, then **Download**.



## Audio Description

Depending upon a video's content, users with visual impairments might not be able to understand what is happening in a video by captions alone. Audio description is a voiceover track that describes the action taking place in a video when it is purely visual. For example, a video of a magician performing a trick might not be comprehensible to someone who cannot visualize the trick being performed. Audio description would describe what the magician is doing step by step.

YouTube does not currently support audio description. However, YouDescribe, a project created by Dr. Joshua Miele at The Smith-Kettlewell Eye Research Institute, enables users to create audio descriptions for their own and others' YouTube videos. YouDescribe is free to use.

For more information about YouDescribe, please see <https://youdescribe.org/support/tutorial>.

# Creating Captions Manually or with Camtasia

Creating your own captions can be tricky. Below are some tips that might help make the process easier.

## When Creating Your Own Videos

- After creating a PowerPoint presentation, use Camtasia to record your narration instead of PowerPoint. Use the voice training feature to enable Camtasia to create more accurate captions from your voice.
- If you are not narrating your presentation on-the-fly, write up a transcript. You can then upload the transcript to Camtasia and synch it to the audio.
- The same process should be followed after creating a video by recording the screen.

## When Creating Captions for Existing Narration

- If you have a transcript, upload the transcript and synch it to the audio.
- If you do not have a transcript, use YouTube to create the captions (see page 15) and then import the caption file into Camtasia.
- Add captions in Camtasia manually, line by line.

# Math

Creating math content that is accessible presents unique challenges. Currently, [MathML](#) is the programming language that is used to write math equations that are accessible. Equations that is written without using MathML will not be read correctly by screen readers. [MathType](#) is a plugin that can be used in Word to write equations and to export content as a webpage. On this page are guidelines for accessible math and pages 23–25 in this booklet will explore MathML in more detail.

## **Guidelines for Accessible Math**

- Allow all expressions to be enlarged on screen.
- Ensure that users with visual impairments can read scientific and mathematical expressions and that users with visual impairments and with physical impairments can write expressions.
- Use MathML to provide access to scientific and mathematical expressions.
- Use [LaTeX](#) to provide access to scientific and mathematical expressions.
- Use prerecorded audio to read static scientific and mathematical expressions.
- Use concatenated speech strings for simple scientific and mathematical expressions.
- Create scientific and mathematical expressions scripts using guidelines for spoken mathematics.

National Center for Accessible Media. (2009). Accessible Digital Media Guidelines. Retrieved November 13, 2018, from [http://ncam.wgbh.org/invent\\_build/web\\_multimedia/accessible-digital-media-guide/guideline-g-math](http://ncam.wgbh.org/invent_build/web_multimedia/accessible-digital-media-guide/guideline-g-math)

# Math on the Web

Putting math on the web means many things to many people—publishing research articles, posting quizzes and reviews for students, web applications for workflows of many kinds, online content in accessible format. For more than a decade, Design Science has been at the forefront, developing tools and technologies for making the web more useful for math and science communication.

## MathPage: From Word to the Web

[MathType](#) includes [MathPage™ technology](#) that easily converts Microsoft Word documents to web pages, properly handling mathematical symbols and equations, viewable in any modern Windows, Macintosh, Unix and Linux browser.

## Working With Websites and Applications

Most websites and applications represent equations in one of a few standard formats such as [MathML](#) and TeX, but there are many subtle variations. MathType has sophisticated input and output translation capabilities that let you ignore the technicalities. MathType lets you copy and paste between hundreds of popular websites such as Wikipedia. You can also use MathType to paste MathML, TeX, or equation images in learning management systems, blogs and wikis. Find out more in the [MathType Works With... pages](#), or if you are technically inclined, find out about writing your own input and output translators using the [MathType SDK](#).

## Web Publishing

Publishing math and science content to the web is technically challenging because of the difficulty of displaying high-quality math notation in a browser-independent



way. MathML has enjoyed impressive success as a format for representing and exchanging mathematical notation, but browser support remains idiosyncratic. In Internet Explorer, our MathPlayer add-on has long been the best means of displaying math notation. However, to address a wider range of browsers, Design Science formed a partnership with the American Mathematical Society and the Society for Industrial and Applied Mathematics to sponsor an exciting initiative called [MathJax](#). MathJax brings high-quality MathML rendering to any JavaScript and CSS capable browser.

### **Math-enabled Web Applications**

Wikis, blogs, course management systems, and many other [kinds of web application](#) must be able to handle math notation when used in math and science contexts. Such applications not only need to display math, but to provide users a way to edit math as well. [MathFlow Components](#) provides developers and system integrators with the editing and display functionality needed to create math-enabled web applications. To find out more about MathFlow Components and the MathFlow SDK, please [contact us](#).

### **Making Math on the Web Accessible**

Accessibility for individuals with print disabilities such as low vision, dyslexia and blindness has made great strides over the last decade. Formats such as the [DAISY-NISO](#) standard for Digital Talking Books, and regulations such as [Individuals with Disabilities Education Act](#) have profoundly changed the accessibility landscape for math and science. In part because of Design Science's technical leadership, these formats and standards directly incorporate support for mathematics notation. Our [MathPlayer](#) display engine

for Internet Explorer interoperates with leading screen readers and offers state-of-the-art math accessibility functionality. Our [MathDaisy](#) tool works in conjunction with leading DAISY book authoring tools to create accessible math and science content. To learn more about Design Science's advocacy and technology for math accessibility, consult our [Solutions for the Accessibility Community](#) pages.

### **Learning More About MathML**

MathML is the standard way of encoding mathematics notation using XML. Since its introduction in 1998, it has been incorporated into many other formats, and is now supported to some degree by most math-related software packages including browsers, editors, computer algebra programs, and publishing software. MathML technology is deeply incorporated into Design Science products, and the staff of Design Science has played a leading role in developing this important new technology. Consult [About MathML](#) for more information and related resources.

### **Math On the Web Status Report Archives**

Beginning in 2001 and continuing for several years, Design Science published a semi-annual [Math on the web status report](#) with a special focus and an objective report on the state of Math on the web software. Consult the [Math on the web: A Status Report](#) archives for a historical view of math on the web. For up-to-date on Math on the web news and information, [join our Math on the web mailing list](#).

# Interactive Presentations

Many of the same principles of accessibility apply when creating interactive presentations, aka “eCourses.”

- Use a san serif font no smaller than 18 points.
- Make sure there is a 4.5 to 1 contrast ratio between the text color and background.
- Make sure tabs open in reading order.
- Do not use blinking or flashing animations.
- Apply alt text to any essential images or graphics.
- Hyperlink text should be descriptive of the website the hyperlink leads to.
- Make closed captions and transcripts available.
- Make sure that all commands can be executed with a keyboard, without the use of a mouse. Avoid drag-and-drop, as this feature is not keyboard accessible.
- Do not set any embedded videos to autoplay.

# Blackboard

In addition to your documents and media being ADA compliant, your Blackboard course also needs to be compliant. Most of the same general principles apply.

- Include SCCC's accessibility statement in your course outline.
- Use standard fonts that are 12 points in size or larger.
- Make sure there is a 4.5 to 1 contrast ratio between the text color and background. This is especially important when creating custom buttons for the course menu.
- Do not use color to convey meaning.
- Include alt text for all images and graphics.
- Using heading styles when writing text in the text editor.
- Always include a header row if using tables to organize content. Test out the table with a screen reader to make sure that the screen reader reads the content in the correct order.
- Consider using learning modules instead of content folders. Learning modules reduce the need to scroll. Content folders require a user to scroll down the page in order to access all the material.
- Make sure that all your documents, videos, and linked content is ADA compliant.
- Remove any unused buttons or tools.

# SensusAccess

SensusAccess is a self-service solution that automates the conversion of documents into a range of alternate formats including digital Braille, MP3 audio files, DAISY structured audio books and e-books. The service can also be used to convert otherwise inaccessible documents such as image-only PDF files, scanned documents, pictures of text and Microsoft PowerPoint presentations into more accessible formats. (SensusAccess, n.d.)

A link to the SensusAccess tool (web form) can be found on the MySCCC homepage. Once you click on the link, follow the directions to begin converting your documents.

The screenshot shows the 'SensusAccess Document Conversion Service' web form. The title is 'Convert Documents to Alternative Formats'. Below the title, there is a paragraph of introductory text. A list of instructions follows, with the first item 'Click SensusAccess web form' highlighted by a red box and a red arrow pointing to it. A red circle with the number '1' is placed next to this instruction. The second instruction, 'Upload your document', is also highlighted by a red box and a red arrow pointing to it. A red circle with the number '2' is placed next to this instruction. Below the list, there is a paragraph of text about receiving the converted document. At the bottom, there is a link to 'tutorials' and a contact email 'support@sensus.dk', both highlighted by red boxes.

**SensusAccess Document Conversion Service**

### Convert Documents to Alternative Formats

Students and faculty can now use **SensusAccess**, an automated file conversion tool, to convert documents to alternative formats, such as audio, Braille or eBook, or into formats that are more accessible, such as tagged PDFs. Simply follow the directions below to get started

- Click [SensusAccess web form](#)
- Upload your document
- Choose the output format
- Enter your SCCC email address

In about ten minutes (or longer depending on file size), you'll receive the converted document to your SCCC email inbox. If you do not see the email, make sure to check your spam folder.

For more help on how to use SensusAccess, please see these [tutorials](#) or contact [support@sensus.dk](mailto:support@sensus.dk).

Please note that SensusAccess will not make inaccessible documents accessible. It is, however, a handy tool for making inaccessible documents more accessible. For detailed instructions on how to use SensusAccess, please see this eLearning course (you must be logged into MySCCC): <https://www.sensusaccess.com/sensusaccess-e-learning> For assistance using SensusAccess or if you have any questions, please contact [support@sensus.dk](mailto:support@sensus.dk)

# ADA Compliance Checklist

The checklist on pages 28–31 will guide you through the steps necessary to ensure that your course is accessible to your online course participants.

## **Microsoft Word Documents**

- Used Word's built-in formatting styles to create headings, page numbers, columns, tables, footnotes, and bulleted/numbered lists.
- Used Styles to structure content hierarchically by heading, subheading, and paragraph.
- Fonts are at least 12 points in size.
- Standard fonts are used.
- There is a 4.5 to 1 contrast ratio between the text color and background.
- Text boxes are not used.
- Tables include header rows and screen readers read the content in the correct order.
- Color is not used to relay important information.
- Alt text is included for all informational images, graphics, charts or graphs.
- Multiple images or graphics that are meant to go together to form one object are grouped.
- Meaningful text is used when creating URLs.

## **PDFs**

- PDFs created in Microsoft Word follow all the standards from the Word document checklist and are exported from Word as tagged PDFs.

## **PowerPoint Presentations**

- The preset slide layouts are used.
- If text boxes are used, they have been placed onto the slide in reading order.
- Sans serif fonts no smaller than 18 points are used.
- There is a 4.5 to 1 contrast ratio between the text color and background.
- There are no blinking or flashing animations.
- Alt text is applied to any essential images or graphics.
- Hyperlink text includes the full URL.
- Embedded videos are not set to autoplay.

## **Videos**

- Captions and a transcript are included.
- Audio description is included if needed.
- There is a 4.5 to 1 contrast ratio between the text color and background.
- There are no blinking or flashing animations.
- Alt text is applied to any essential images or graphics.
- Hyperlink text includes the full URL.

## **Interactive Presentations**

- Used a san serif font no smaller than 18 points.
- There is a 4.5 to 1 contrast ratio between the text color and background.
- Tabs open in the correct reading order.
- There are no blinking or flashing animations.
- Applied alt text to any essential images or graphics.
- Hyperlink text is descriptive of the website the hyperlink leads to.
- Closed captions and transcripts are available.
- All commands can be executed with a keyboard, without the use of a mouse.
- Videos are not set to autoplay.

## **Math**

- Allow all expressions to be enlarged on screen.
- Ensure that users with visual impairments can read scientific and mathematical expressions and that users with visual impairments and with physical impairments can write expressions.
- Use MathML to provide access to scientific and mathematical expressions
- Use LaTeX to provide access to scientific and mathematical expressions.
- Use prerecorded audio to read static scientific and mathematical expressions



- Use concatenated speech strings for simple scientific and mathematical expressions.
- Create scientific and mathematical expressions scripts using guidelines for spoken mathematics.

## **Blackboard**

- SCCC's accessibility statement is included in the course outline.
- Standard fonts that are 12 points in size or larger are used.
- There is a 4.5 to 1 contrast ratio between the text color and background.
- Color is not used to convey meaning.
- Alt text is included for all images and graphics.
- Heading styles are used when writing text in the text editor.
- Tables include header rows and screen readers read the content in the correct order.
- Learning modules are used instead of content folders.
- All documents, videos, and linked content is ADA compliant.
- Both Word and PDF versions of documents are provided.
- Unused buttons or tools are removed.

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