If you are AgriLife leadership, faculty, or staff creating educational content for any course that will be delivered on the *AgriLife Learn* platform, the AgriLife Digital Education team can work with you to create accessible content. We also provide accessibility support for College of Agriculture and Life Sciences faculty in Canvas. For more information, please contact us through our website: *digitaleducation.org/contact*.

Accessibility and Usability Overview

Web accessibility is not only the right thing to do but also the smart and legal thing to do. Many organizations, universities included, have faced complaints, lawsuits, and settlements because of accessibility violations. More information about the importance of web accessibility and creating accessible content at Texas A&M can be found online at TAMU IT Accessibility Introduction to Web Accessibility.

Creating accessible content means including everyone by allowing equal access, regardless of disability. A disability can be any type of temporary or permanent impairment, whether it be visual, auditory, physical, cognitive, neurological, or speech related. The information provided here is not intended to cover every possible scenario you may encounter as accessibility, disabilities, and web use are ever evolving. There are links included throughout this guide and in the final "Resources and Training Recommendations" section. We encourage you to visit these links and continue to build your understanding of accessibility and useability.

Contact Information

For questions related to accessibility in AgriLife Digital Education (ADE) content or help with any of the topics listed in this guide, please email ade@ag.tamu.edu and include "accessibility" in the subject line. Students, faculty, or staff in the College of Agriculture and Life Sciences can also contact Melissa Perez with questions and for resources about Disability Resources.

Table of Contents

Laws, Regulations, and Standards

Section 504 of the Rehabilitation Act

Section 504 was the first civil rights legislation in the United States (US) designed to protect individuals with disabilities from discrimination based on their disability status. Per Section 504, all government agencies, federally funded projects, and postsecondary entities (state colleges, universities, and vocational training schools) may not discriminate against those with disabilities.

Section 508 of the Rehabilitation Act

- Agencies must give members of the public, students, and employees with disabilities access to information comparable to the access available to others, making their electronic and information technology (EIT) accessible. Section 508 Checklist
- State institutes of higher education are required to comply with Texas accessibility statutes and rules. EIR Accessibility from Texas Department of Information Resources

The Americans with Disability Act (ADA)

The ADA is civil rights legislation designed to make sure that people with disabilities have an equal opportunity to participate in programs, services, and activities. While the ADA does not deal directly with online accessibility, two major sections in the ADA that may apply to web accessibility are:

- **Title II**, which states that communication with people with disabilities must be as effective as communication with others.
- **Title III**, which deals with public accommodation for people with disabilities.

For more information regarding ADA in the workplace, please refer to the Americans with Disabilities Act (ADA) website by Employee Relations.

Web Content and Accessibility Guidelines (WCAG)

WCAG is published by the Web Accessibility Initiative of the World Wide Web Consortium (W3C). Because multiple versions have been published, the best way to find the most recent guidelines is online at Current W3C WCAG Recommendation.

Texas A&M University and AgriLife Standards

As of August 2021, Texas A&M's Web Accessibility Standards are based on Section 508 and WCAG 2.1, Level AA. More information about these standards at Texas A&M can be found online at TAMU IT Accessibility Web Accessibility Standards. AgriLife's recommendations on web accessibility are in line with Texas A&M's standards.

Alternative Text

Alternative text (alt text) provides a textual alternative to non-text content (mainly images) on web pages/in files. Alt text is useful because it can be read by screen readers to make images accessible to people with visual or cognitive impairments, it can be displayed in browsers to replace the improperly loaded image, and it provides a meaningful description of images that can be read by search engines.

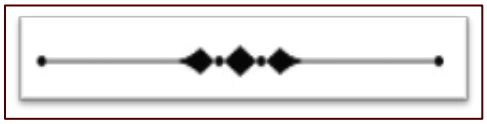
How to Write Alt Text

When we write alternative text for images, context matters. Images in different contexts can have totally different alt text. Learn more at Context is Everything by WebAIM: Alternative Text. Also, please bear in mind the following rules when writing alt text for images:

- Be accurate and equivalent.
- Be succinct and not redundant.
- Do not use the phrases "image of ..." or "graphic of ..." to describe the image.

Decorative Images

Decorative images do not present important content and are used for non-informative purposes, such as line separator images, as seen below.

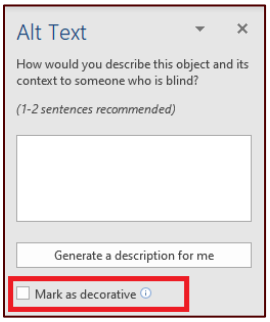


In most cases, there are two options:

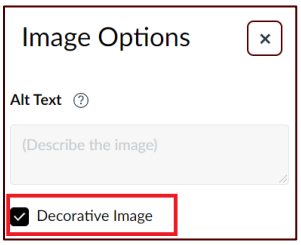
- Remove the image because it does not convey important information, or
- Mark the image as a decorative image.

Different applications have different features when it comes to marking decorative images. The following are the most common cases:

- When editing images in Microsoft products, you can right-click the image and select “Edit Alt Text.” The “Alt Text” panel will open on the right-hand side, and you can check the checkbox at the bottom to mark an image as decorative.



- When editing images in Learning Management Systems (LMS), in this case Canvas, you can hover over the image and select “Image Options.” Once the image panel opens, you can check the checkbox to mark the image as decorative.



- When editing images on websites, you can input “null” for the alt attribute in HTML to mark an image as decorative, so the screen readers will ignore the image.

```
<img id="2314257" src="https://canvas.tamu.edu/courses/61359/files/13
932539/preview" alt="" width="25%" height="281" data-ally-user-
updated-alt="syllabus logo" data-api-endpoint="https://canvas.tamu.ed
u/api/v1/courses/61359/files/13932539" data-api-returntype="File"
data-id="13932539" style="max-width: 273px;"> == $0
```

Functional Images

Functional images serve certain purposes, such as navigation or linking to another location. For example, the following button image is used to link to the next page in a PowerPoint. The alt text can be "Next page to [*next page title*]."

Advanced Images

Besides decorative and functional images, we also need to consider how to write alt text for advanced images, such as logos, background images, graphs, charts, and so on.

Logos

Logos are often used on websites, documentation, and multimedia resources as branding. It is usually sufficient to write alternative text for the logo using the institution name. For example, the alt text for the image below can be "Texas A&M AgriLife Digital Education." Please note that it is not typically necessary to identify the logo as actually being a logo because the text "logo" is neither the content nor the function of the image.

Background Images

Generally, images that convey information should not be used as backgrounds. However, if it is for the purpose of decoration, we can mark it as a decorative image.

Complex Images

Complex images convey more information than normal images do, and they cannot be conveyed in a short phrase or sentence. Complex images typically include

graphs and charts, such as flow charts and organizational charts, diagrams and illustrations, and maps showing locations or other information such as weather systems.

In these cases, it is best practice to include a short alt text of the image and indicate the location of the long description of the image. The most relevant options would be to:

1. Put a link to the long description near the image, or
2. Describe the location of the long description in the alt attribute.

Take our organizational chart, for example. Using the options, it would be like this:

1. The first option is to provide a short alt text, such as "*An organizational chart of the Office of the Vice Chancellor and Dean for Agriculture and Life Sciences,*" and a link near the image, like in the example below.

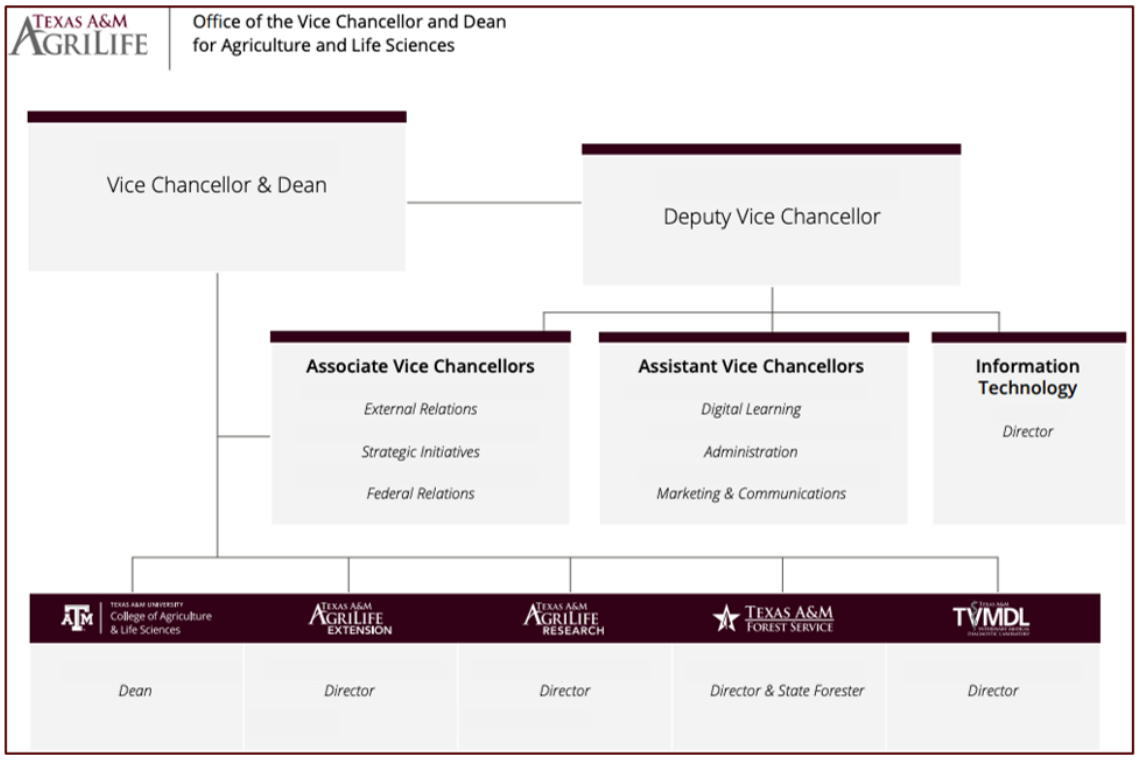


Image Description [insert web link to long description of image here]

2. The second option is to include the location of a long description in the alt attribute. The alt text can be "*An organizational chart of the Office of the Vice Chancellor and Dean for Agriculture and Life Sciences. A long description is located below the image*."

Long description text example:

> *"The chart of the Office of the Vice Chancellor and Dean for Agriculture and Life Sciences mainly shows the organizational relationship. The structure of the chart presented on the image:*
>
> - *[Insert name here] is the Vice Chancellor and Dean, the Dean of Texas A&M College of Agriculture and Life Sciences and the Director of Texas A&M AgriLife Research, working with [insert name here], the Director of Texas A&M AgriLife Extension, with [insert name here], the Director of Texas A&M Forest Service and with [insert name here], the Director of TVMDL.*
> - *[Insert name here] is the Deputy Vice Chancellor, supervising:*
>   - *[Insert name here], Associate Vice Chancellor of External Relations*
>   - *[Insert name here], Associate Vice Chancellor of Strategic Initiatives*
>   - *[Insert name here], Associate Vice Chancellor of federal Relations*
>   - *[Insert name here], Assistant Vice Chancellor of Digital Education*
>   - *[Insert name here], Assistant Vice Chancellor of Administration*
>   - *[Insert name here], Assistant Vice Chancellor of Marketing & Communication*
>   - *[Insert name here], Director of Information Technology"*

More information about adding alt text to complex images can be found at Complex Images Tutorial by W3C.

Captions

Captions provide content to people who are deaf or cannot otherwise hear audio. Captions are also used by people who process written information better than audio, whose first language is different than what is spoken in the audio, or those who do not have the proper technology to play audio. Captions appear simultaneously with audio/video content and can be turned on and off. The information in this section provides information in conformance with WCAG 2.0, Level AA. W3C WCAG Captions/Subtitles

Video with Audio Content

A large part of educational content will fall under this category. Does the video have audio information that is needed to understand what the video is communicating? If no, captions are not needed because there is no important audio content, but it is still good to let users know there is some audio (i.e., "[background music]"). If yes, captions are required for pre-recorded and live content.

Audio-only Content

An example of audio-only content is a podcast or audiobook. For pre-recorded content, captions are not required to meet WCAG but are still considered useful; however, transcripts are required. For live content, neither captions nor transcripts are required.

Automatic Captions

Many of the programs we already use, such as YouTube or Zoom, offer options for automatic captions. Automatic captions do not meet accessibility requirements until after they have been reviewed to ensure they are fully accurate, which usually requires significant editing. Think of automatic captions as a starting point for your video caption needs, not the final product. Although there is not a specific

recommended level of accuracy regarding captioning, we recommend always striving for 100 percent in terms of caption accuracy, completeness, and timing.

Captioning Tools

Otter

Otter is a service that can be used to create captions for video or transcripts for audio. With Otter, you can import a video or audio, edit and verify the transcript, and export the file as a SubRip Subtitle file (SRT) for use elsewhere. For a step-by-step guide on using Otter for captioning, including instructions on how to import Zoom recordings, see the Otter Captioning Guide section located in the "Appendix" section of this document.

Vimeo

Once exported, SRT files can be used to add subtitles to videos on a variety of platforms, including Vimeo. For a step-by-step guide on how to use captions from Otter in Vimeo, as well as best practices for Extension videos in Vimeo, see the Vimeo Captioning Guide section located in the "Appendix" section of this document.

YouTube

For a step-by-step guide on how to use captions from Otter in YouTube, see the YouTube Captioning Guide section located in the "Appendix" section of this document.

Transcribing and Editing Tips

When editing automatic captions, or transcribing them manually, keep the following in mind (adapted from W3C WCAG Transcribing Audio to Text):

- Identify speakers: Use the speaker's full name the first time it is mentioned and first name or last name only in later incidences, depending on how formal the tone of the video is (i.e., "Jane" or "Dr. Doe").

- Put unspoken sounds in brackets and format them as lowercase and in italics (i.e., "*[gate closes and latches]*").
- Only capitalize entire words when you want to indicate yelling (i.e., "STOP RIGHT THERE!").
- Do not change, edit, or add text. Transcribe what is said accurately, even if that means leaving grammatical errors.
- Do not provide additional clarification in the captions. If necessary, this can be done in the transcript.
- For most of the content AgriLife produces, it is okay to leave out non-substantive text like "umm", "ahhh", "oh yeah so I forgot where I was", etc.
- Make sure to indicate if there is non-relevant speech that has been excluded from the captions (i.e., "*[students talk amongst themselves while the teacher sets up]*").
- If you cannot understand what is said, use "[unintelligible]".
- Try to keep captions to one or two lines and under 32 characters per line. If breaking up a sentence into multiple segments, try to break at a logical place or phrase.

Transcripts

Transcripts and captions both provide the same word-for-word text versions of speech and audio. While the primary function of captions is to provide content to people who are deaf or who cannot otherwise hear audio, transcripts can help provide content to people who can neither hear audio nor see the video. Unlike captions, which appear simultaneously with audio/video content, transcripts are presented separately in document form. Transcripts should be easy to find and should be included on the same page as the relevant media content whenever possible. The information in this section provides information in conformance with WCAG 2.0, Level AA. W3C WCAG Transcripts

Basic vs. Descriptive Transcripts

There are two main types of transcripts: basic transcripts and descriptive transcripts. Basic transcripts provide a text version of audio information needed to understand the content. Basic transcripts can be easily made using the text from caption files, as outlined in the section below, Creating Transcripts from Captions. Basic transcripts can be as simple as text paragraphs with the speakers identified. An example is included below.

> **Joe:** Hello and welcome to my channel. Today I will be speaking with Susan, who is a vegetable expert in her area.
>
> **Susan:** Hi, Joe. Great to see you again.
>
> **Joe:** Thanks for coming. Lots of gardens in Dallas and the surrounding area were affected by the winter storms this year. Is it the same in your area?
>
> **Susan:** Oh yes. A lot of vegetation is only just now coming back.

Descriptive transcripts include visual information needed to understand the video content, including any text displayed in the video. Description provides content to

people who are blind or who can otherwise not see the video adequately. Description is especially important in videos that show instruction, such as recipes, construction, or assembly. Like basic transcripts, descriptive transcripts can be made using the text from caption files. Descriptive transcripts can be put into table format so that audio information can be read easily down a column. An example of a descriptive transcript in table format is included below (adapted from W3C Example Descriptive Transcript).

Audio	Visual
Video is not just about pictures; it is also about sound. Without the audio, you would have to guess what this film is about.	A man sitting at a desk starts watching a video on his computer.
[no sound]	The video on his computer shows a person speaking to the camera. It is playing with no audio.
Frustrating, isn't it? Not knowing what is going on. That is the situation for everyone who cannot hear.	The man watching the video has a hearing aid.

Alternatively, you can avoid the need for descriptive transcripts by developing a described version of the video from the beginning, which means all visual information that is needed to understand the video content is integrated in the main audio. You can see an example of a video with description integrated into audio from W3C on YouTube. Notice how the speaker describes the papers and the text on them in enough detail that a descriptive transcript is not needed. Keep in mind that having the speaker's face visible allows for the possibility of lip reading. For tips on how to plan for audio description of visual information, see W3C Audio Content and Video Content.

Video with Audio Content

A large part of the content used and created by our team will fall under this category. Transcripts are not required for pre-recorded or live video with audio content.

Audio-only Content

An example of audio-only content is a podcast or audiobook. For pre-recorded content, basic transcripts are required. For live content, transcripts are not required; however, if the audio follows a script, you can provide a copy.

Creating Transcripts from Captions

Use the caption files you have already created to write your transcript. Instead of exporting your caption file as an SRT, export the caption file as plain text (either TXT or DOCX). When creating transcripts from captions, keep the following in mind:

- Keep speaker names.
- Delete the timestamps, either manually or by choosing not to download the timestamps with the file. You can refer to the Otter Captioning Guide (*Export as TXT or DOCX File*) section located in the "Appendix" section of this document for instructions.
- Organize text into logical sentences and paragraphs. This means you are likely to need to combine several lines of caption text into paragraphs.
- Unlike with captions, it is generally acceptable to add text, but make it clear that the addition is not part of the audio. Put any added text in brackets, such as section headings used for navigation.
- Add important visual information, such as text displayed in the video.

For examples of transcripts and where to put them in relation to content, see W3C WCAG Where to Put Transcripts.

Hyperlinks

Since hyperlinks are widely used among course design and web design, it is best practice to make sure that links are accessible to everyone, read by a screen reader, or allowing for keyboard navigation.

In a post by Gian Wild, she has listed a 15-point checklist to make accessible links, and below are the adapted rules that are applicable to our cases:

- Do not use the word “link” in your links as screen readers will tell people when they encounter a link, and thus there is no need to use the words “link” or “links to” or “goes to” in the link text.
- Use meaningful link text**.** Do not use “Click here” or “Read more” as link text.
- Do not capitalize links as some screen readers read capitalized text letter by letter, and people find it harder to read capitalized text, especially people with reading disabilities.
- Avoid using URLs as link text as screen readers are going to read the URL letter by letter. Therefore, use meaningful text as links instead.
- Keep link text concise, restricting the length to a maximum of 100 characters, as screen readers must read the entirety of a link.
- Avoid punctuation or typographic symbols because screen readers cannot be counted on to read most of them. Please refer to the following post for further information if you need to use necessary punctuation or typographic symbols in your hyperlinks. Screen Readers Cannot Always Read What is on the Screen

Color and Contrast

Paying attention to color and color contrast is an important part of making content accessible. This not only includes our online courses but also our websites, presentations, documents, and social media posts. When discussing accessibility, individuals with complete blindness utilizing screen readers is a common example. This, however, fails to address that there are many types of blindness, such as low vision or loss of peripheral or central vision. Other visual impairments can include blurred vision, light sensitivity, or night blindness. In addition, color blindness, while not a true form of blindness, causes problems in the way color is processed. This can result in difficulty distinguishing certain colors, such as red and green or blue and yellow. Although color blindness is not considered a disability or protected under ADA, WCAG does have required minimum levels of contrast levels, covered under Guideline 1.4 – Distinguishable. The information in this section provides information in conformance with WCAG 2.0, Level AA. The AgriLife Brand Guide should also be taken into consideration when choosing color for content. For guidelines on color and contrast in Microsoft Products, see the Accessibility in Microsoft Office Products section of this guide.

Color

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. To avoid this, ensure that information conveyed by color differences is also conveyed in text. The key is to be redundant when it comes to visual cues using color. Examples are included below (adapted from W3C WCAG Use of Color):

- You have a slide that contains a maroon button containing the word “Start Course.” In your instructions, do not say “click the maroon button to start.” Instead, say “press the button labelled ‘Start Course’ to start.”

- You have a survey that has both mandatory and optional questions, with mandatory questions displayed in red text. Add an asterisk to the end of the mandatory questions, in addition to the red. Make sure to include text indicating that an asterisk is used and consider increasing the size of the asterisk for users with low vision. Another option would be to add "Required:" or "Optional:" before each type of question.
- You should always use the default formatting for links, which are presented both in a different color than un-linked text and underlined.
- You have a paragraph that discusses the similarities of a word in two different languages, and you want to highlight the different parts of the word for emphasis. Consider putting the stem of the word in the first language in blue, bolded text, and the stem of the word in the second language in red, italicized text.

Red/Green

Deuteranopia (difficulty distinguishing between red and green) is the most common form of color blindness. To accommodate this, try to avoid pairing red and green in online or print content, including using red/green to indicate no/yes, bad/good, stop/go, etc.

Contrast

Color and background choices are important for individuals that are colorblind, have low vision, or might otherwise find it difficult to distinguish between text and background colors. Appropriate color contrast also makes it easier to read content in low light or extremely sunny conditions. Make sure there is a contrast ratio of at least 4.5:1 between text and its background, except for:

- Large text: Large-scale text requires a contrast ratio of at least 3:1.

- Incidental: Text that is purely for decoration, part of a picture that contains significant other visual content, or that is not visual to anyone does not have contrast ratio requirements.
- Logos: Text that is part of a logo or brand name does not have contrast ratio requirements.

One of the easiest ways to confirm a 4.5:1 contrast ratio is to use a color contrast checker, like color contrast checker from WebAIM or color contrast checker from Juicy Studio. For quick reference, some examples of text with almost exactly 4.5:1 contrast from WebAIM: Contrast and Color Accessibility are included below. You may be surprised to see that some of these combinations are not very readable. That is why 4.5:1 is the minimum requirement.

- Gray (#767676) on white
- Purple (#CC21CC) white
- Blue (#000063) on gray (#808080)
- Red (#E60000) on yellow (#FFFF47)

Detailed information on accessible color pairings and contrast examples are available from US Web Design System (USWDS). USWDS Color and Accessibility

Readability

Accessible Typography

Typography is the arrangement of typefaces (i.e., Open Sans) and fonts (i.e., 14-point, bold font in Open Sans typeface) to make text readable, understandable, and consistent. Principles to consider for optimizing readability and understandability include (adapted from WebAIM Typefaces and Fonts):

- Use simple, familiar fonts.
- Use a limited number of typefaces, fonts, and font variations.
- Consider spacing and weight.
- Ensure sufficient, but not too much, contrast between the text and the background.
- Avoid small font sizes.

Font

There is no one typeface or font that is optimal for all users. There are, however, four primary typefaces used in the Texas A&M AgriLife brand: Open Sans, Minion Pro, Oswald, and Moriston. The AgriLife font package is available for download from the AgriLife Brand Guide. These typefaces allow for visual accessibility as they are simple, familiar, and easy to read, with adequate letter and word spacing. For users with dyslexia, Chrome has an extension that overrides web page fonts with the OpenDyslexic font and an extension that utilizes eye-guiding color gradient.

Size and Scalability

Font needs to be scalable, not fixed. This means that text (except for captions and images of text) can be resized without assistive technology. If you are using technology that does not provide zoom support, you are responsible for providing that function, either through zoom or the ability for the user to change text size. Per WCAG 2.0, Level AA, text size should be able to be resized up to 200 percent

without loss of content or functionality (i.e., disappearing or overlapping text). W3C WCAG Resize Text

Testing Scalability

Here, you can see an example from uiAccess of scalable (does resize) and fixed (does not resize) text. The simplest way to test scalability is to open the document or webpage in two different browser windows to compare the page with both small and large fonts. If the text does not change when you drastically adjust your font size settings, the text is not scaling properly.

Text Spacing

Per WCAG 2.1, level AA, text spacing should comply with all the following to avoid loss of content or functionality:

- Line height (line spacing) is at least 1.5 times the font size.
- Spacing following paragraphs is at least 2 times the font size.
- Letter spacing (tracking) is at least 0.12 times the font size.
- Word spacing is at least 0.16 times the font size.

WCAG 2.1 Success Criterion 1.4.12 Text Spacing

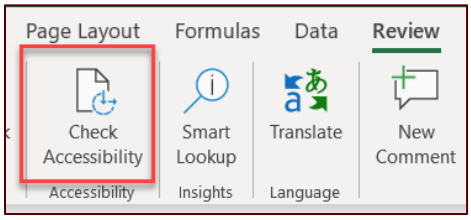
Reading Level

Complex writing can be a barrier for some learners that have cognitive or reading impairments, or whose first language is not English. Although it is not considered an accessibility requirement, it is best practice to write content at an 8th grade reading level. There are various resources online that will calculate the readability of your document or webpage that can help you gauge reading level:

- Datayze Readability Analyzer
- WebFX Readability Test Tool
- Readable
- Readability Score Chrome extension

Accessibility in Microsoft Office Products

Microsoft products have accessibility checkers you can use to make documents more accessible. Accessibility in Microsoft products falls into similar categories discussed in this guide, but there are specific best practices and resources to consider when creating content using these products. Accessibility checkers for Word, PowerPoint, and Excel can be found on the ribbon: "Review" tab > "Check Accessibility" once you are in the applications.



Microsoft Word

Best practices for making Word documents accessible (adapted from Make your Word documents accessible to people with disabilities):

- Use built-in headings and styles. Headings in Word (1:25 minutes)
- Add alternative text to all visuals, including pictures, SmartArt graphics, shapes, groups, charts, embedded objects, ink, and videos. Alt Text in Word (2:07 minutes)
- Use meaningful hyperlink text. Hyperlinks in Word (2:09 minutes)
- Ensure that color is not the only means of conveying information. Accessible Text Format in Word
- Use sufficient contrast for text and background colors. The accessibility checker can be used to find insufficient color contrast.
- Use a simple table structure and specify column header. Accessible Table in Word (2:18 minutes)

Microsoft PowerPoint

Best practices for making PowerPoint presentations accessible (adapted from Make your PowerPoint presentations accessible to people with disabilities):

- Use built-in slide designs. Accessible Templates in PowerPoint (2:17 minutes)
- Give every slide a unique title.
- Make sure slide contents can be read in the order that you intend. Reading Order in PowerPoint Slides (2:29 minutes)
- Use a larger font size (18 point or larger), sans serif fonts, and sufficient white space. Design Slides for People with Dyslexia (3:50 minutes)
- Add alternative text to all visuals, including pictures, SmartArt graphics, shapes, groups, charts, embedded objects, ink, and videos. Alt Text in PowerPoint (1:38 minutes)
- Use meaningful hyperlink text. Hyperlinks in PowerPoint
- Use sufficient contrast for text and background colors. Accessible Text Color in PowerPoint
- Use a simple table structure and specify column header. Table Headers in PowerPoint
- Make videos accessible to visually impaired and hearing-impaired users. Use Captions, Subtitles, and Alternative Audio Tracks in Videos

Microsoft Excel

Best practices for making Excel spreadsheets accessible (adapted from Make your Excel documents accessible to people with disabilities):

- Use pre-built Excel templates, which can help save time and improve accessibility. Templates in Excel (2:28 minutes)
- Give all sheet tabs unique names and remove blank sheets. Rename Sheet Tabs in Excel and Delete Sheet Tabs in Excel

- Use a simple table structure and specify column header. Accessible Tables in Excel (4:24 minutes)
- Include alternative text with charts/graphs. Accessible Charts in Excel (4:12 minutes)
- Use meaningful hyperlink text. Hyperlinks in Excel
- Use sufficient contrast for text and background colors. Accessible Text Color in Excel

Microsoft Outlook

If you are interested in learning more about accessibility in Microsoft Outlook, check out the following resources:

- Create more accessible email messages in Outlook (Video Tutorials)
- Make Outlook emails accessible to people with disabilities (Text Instructions)

Microsoft Teams

If you are interested in learning more about accessibility in Microsoft Teams, check out Microsoft's Accessibility Overview of Microsoft Teams.

Accessibility in PDFs

Portable Document Format (PDF) files can be created from scanned documents, which are images from a scanner or a photocopier, converted Microsoft Office (Word, Excel, and PowerPoint) documents or Google documents, and/or Adobe InDesign. If you want to learn more about PDFs, please refer to the video introduction of PDFs.

Generally, in terms of accessibility in PDFs, we are talking about features including but not limited to structured tags, searchable text, alt text for images, navigational aids, fonts that allow characters to be extracted to text, interactive form fields, and security settings that allow for access of screen readers.

Scanned Documents

To make scanned documents accessible, use the tool Optical Character Recognition (OCR) in Adobe Acrobat to recognize text in scanned documents. In addition, if you are interested in correcting text errors after running the OCR tool, please refer to Adobe's guide on how to correct OCR text in PDFs.

Converted Microsoft Office Documents

Oftentimes we use Microsoft products (e.g., Microsoft Word) to create a source document and then convert it to a PDF. Making this source document as accessible as possible can avoid unnecessary work after conversion to a PDF. For example, an accessible Word document including document title, appropriate headings, alt text for images, descriptive hyperlinks, clear table structure, and row/column headers can guarantee good overall accessibility in the PDF. Once you make your source documents accessible, you can then turn them into PDFs. Please refer to Accessibility in Microsoft Office Products for more specific information. If you need

help with converting Microsoft Products to PDFs, please refer to the following resources:

- LinkedIn Learning Video Tutorials
    - From Word to PDF
    - From Excel to PDF and From PowerPoint to PDF
- Or a text guide on Saving an accessible PDF in Microsoft Office

Adobe InDesign Documents

Adobe InDesign is a tool to create digital and print layouts, which can be later exported to a PDF format. Therefore, applying accessibility features in InDesign files can reduce the time to fix PDFs in Adobe Acrobat. Learn more about Adobe InDesign Accessibility.

PDFs from Web Pages

While it is not common to create a PDF from a web page, if you are interested in saving a web page as a PDF and share it as a resource, take a look at Create a tagged PDF from a web page from Adobe.

Accessibility in Adobe Acrobat

Adobe Acrobat is the most used application to evaluate and repair accessibility in PDF files. Adobe Acrobat has two major accessibility tools: the Make Accessible Action Wizard and the Accessibility Checker.

Make Accessible Action Wizard

This is a tool that walks users through steps to make accessible PDFs. Once you run the tool on a PDF file, it will guide you step by step in looking for common issues that need to be fixed, such as a missing document title, undefined document language, scanned text, untagged content, and images without alt text. The last step will be running the Accessibility Checker (Full Check). You can learn more about

this tool through the YouTube video, PDF Accessibility - Make Accessible with Action Wizard.

Accessibility Checker

This is a tool that performs a thorough check of a PDF file. If you do not see this tool on your right-hand side menu after opening Acrobat, you can locate it under the "Tools" tab. In addition, there is a chapter in the course Making an Existing PDF File Accessible in LinkedIn Learning, which has a full description of how to use this tool to enhance accessibility in PDFs.

If you are interested in learning more about accessibility in Adobe Acrobat, you can check out the LinkedIn Learning course Creating Accessible PDFs and Adobe's Using the Acrobat Pro DC Accessibility Checker.

Specific Team Considerations

The information covered in this guide up until this point covers topics that are likely to apply to AgriLife staff or faculty as a whole. This section will touch on accessibility topics that are more likely to only apply to specific groups of individuals.

Instructional Design

Universal Design for Learning

Universal Design for Learning (UDL) is a framework that guides the design of instructional goals, assessments, methods, and materials to meet individual needs. These guidelines can be found at The UDL Guidelines.

In a TED talk by Michael Nesmith, he talks about his perspectives in visual/conceptual way of thinking and problem solving and how he finds solutions around his disability through Universal Design.

Implementation of Universal Design for Learning

From the perspective of instructional designers, UDL is an inclusive and accessible solution for a wider learner base and provides guidelines on building more accessible and flexible course materials and assignments to meet the learning needs of diverse learners, including learners with or without disabilities. The following are the instructional planning process of UDL implementation (adapted from the Universal Design for Learning Implementation and Research Network):

- Establish clear course goals and specific learning outcomes.
- Anticipate and prepare for learner variability.
- Build flexibility in instructional methods and materials.
- Monitor learning progress and provide timely feedback.

For more details about UDL implementation, please visit Universal Design for Learning Implementation. In addition, the TAMU Disability Office provides some instruction examples of Universal Design, and the Center on Disability and

Development offers an "Accessibility in Aggieland" webinar series, among which the Universal Design for Learning webinar includes an informative live binder on UDL (password is TAMUUDL).

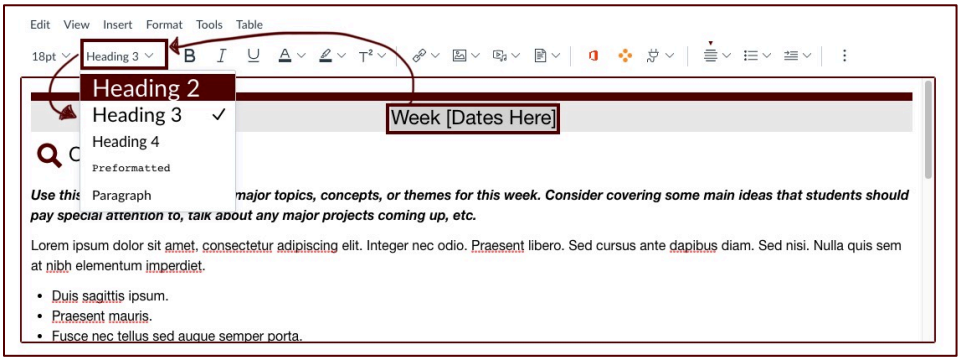
Accessible Design in Learning Management Systems

Blackboard Ally is an accessibility tool that can be used in LMS, including Canvas, Blackboard, and Brightspace by D2L, when activated. Please note that Ally does not make content accessible automatically; however, it will flag some content if it is not accessible enough. From there, it is up to the faculty member or the instructional designer to make the necessary changes. For instance, if a PDF is marked "improper headings," that can be fixed by changing the headings with Adobe Acrobat and then uploading the updated document in place of the inaccessible version. Currently, the ADE team does not have access to Ally for Brightspace, but Ally for Canvas is enabled. More detailed information on using Blackboard Ally for LMS or websites can be found on their Blackboard Ally Help page.

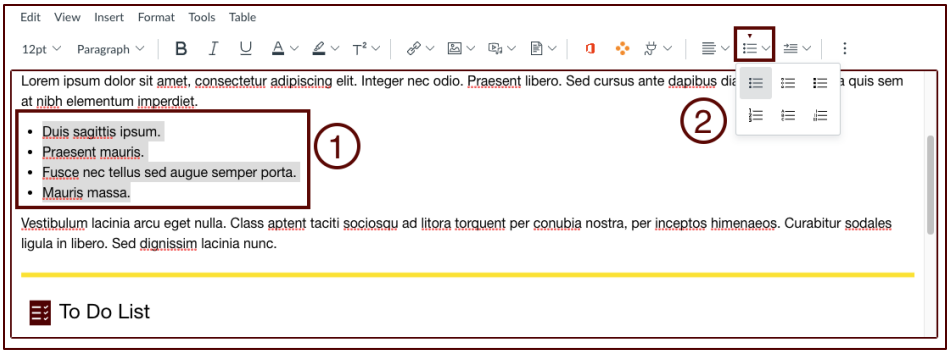
Canvas

Accessibility in Canvas falls into similar categories discussed in this guide, but there are elements to consider when creating content in Canvas' rich content editor:

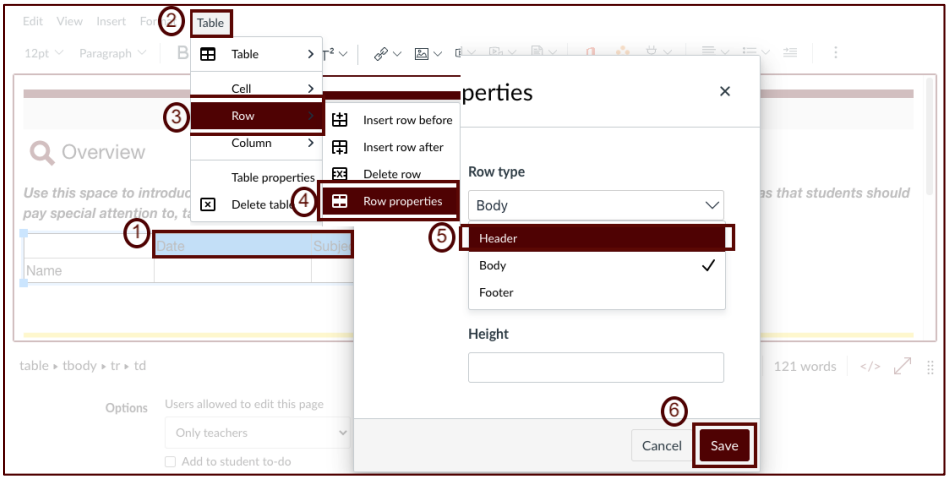
- Use heading structure so screen readers can navigate through the content.



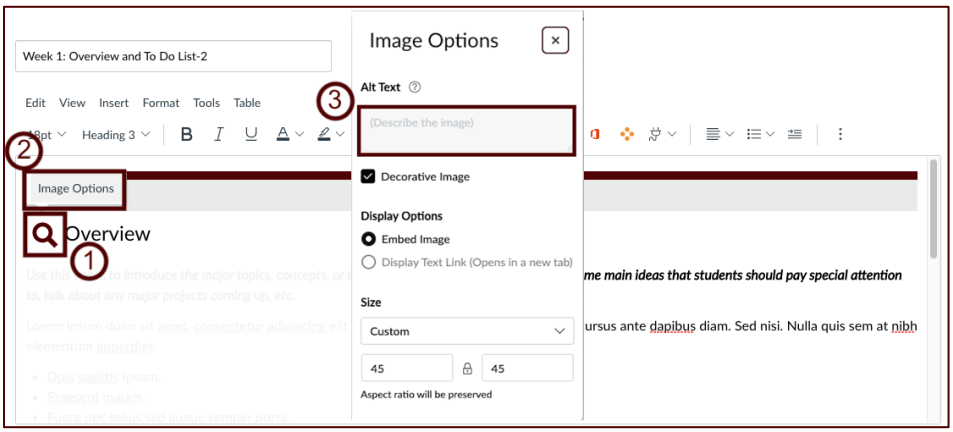
- Lists need to be formatted using the list tool.



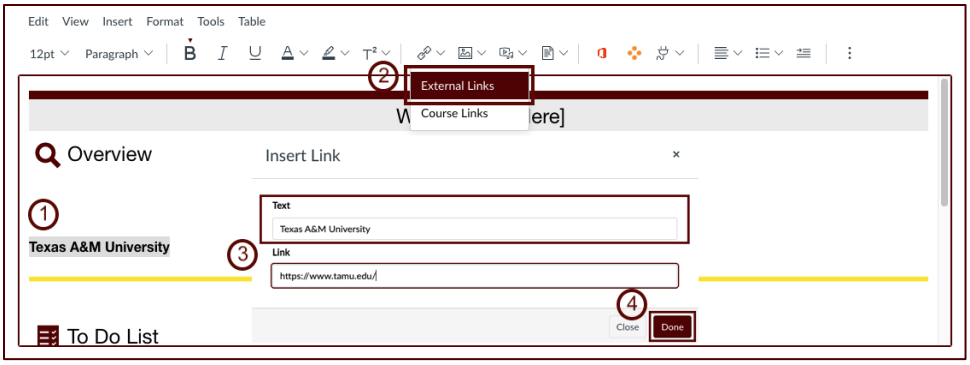
- Create tables with row/column headers.



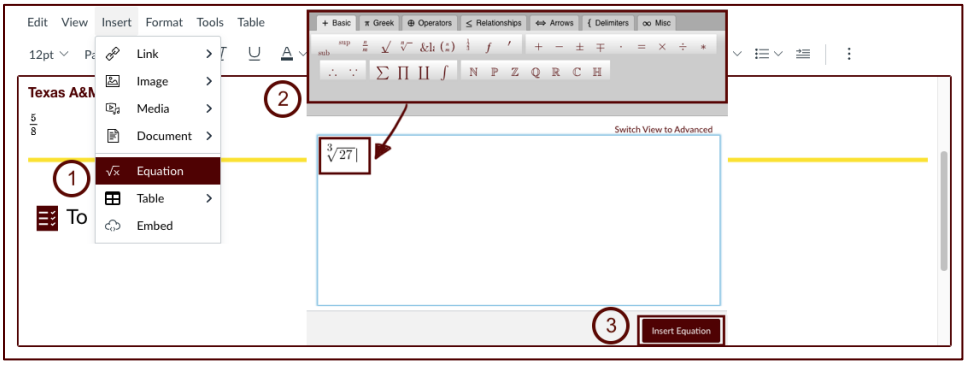
- Add alt text for images and shapes.



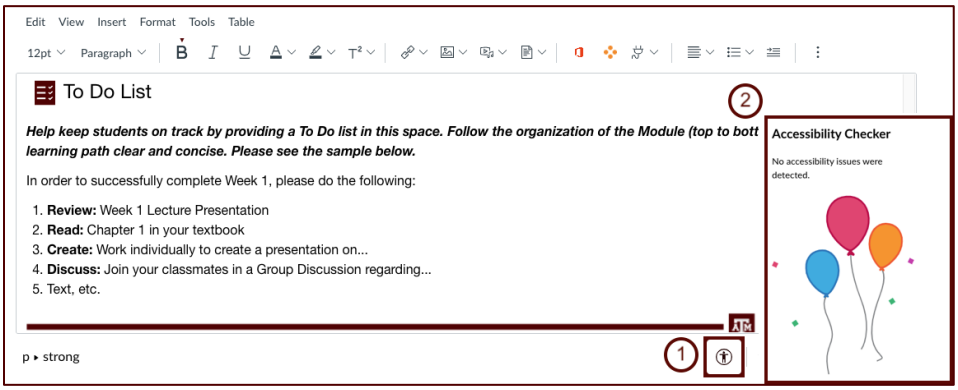
- Use meaningful hyperlink text.



- Use math equations instead of images when needed.



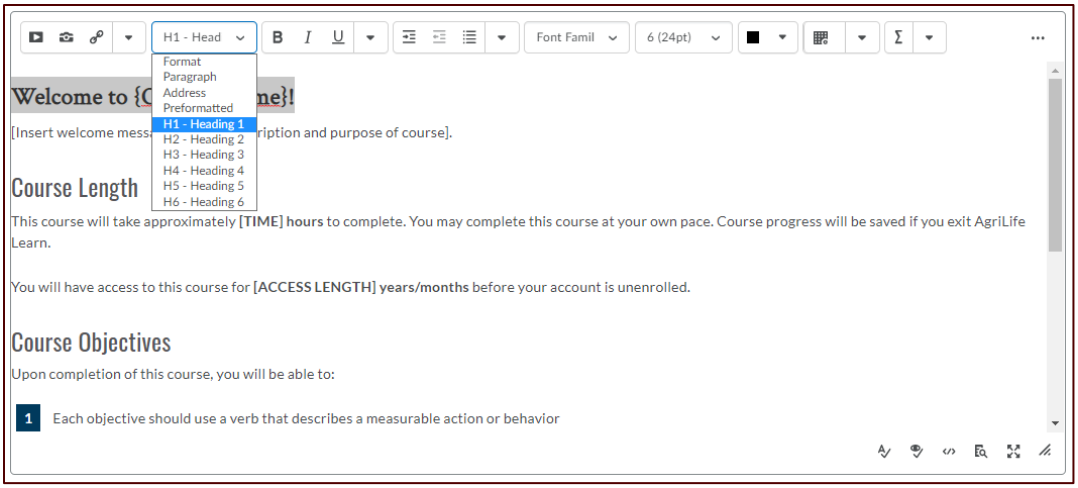
- Use sufficient color contrast.
- Use the accessibility checker to ensure everything is accessible.



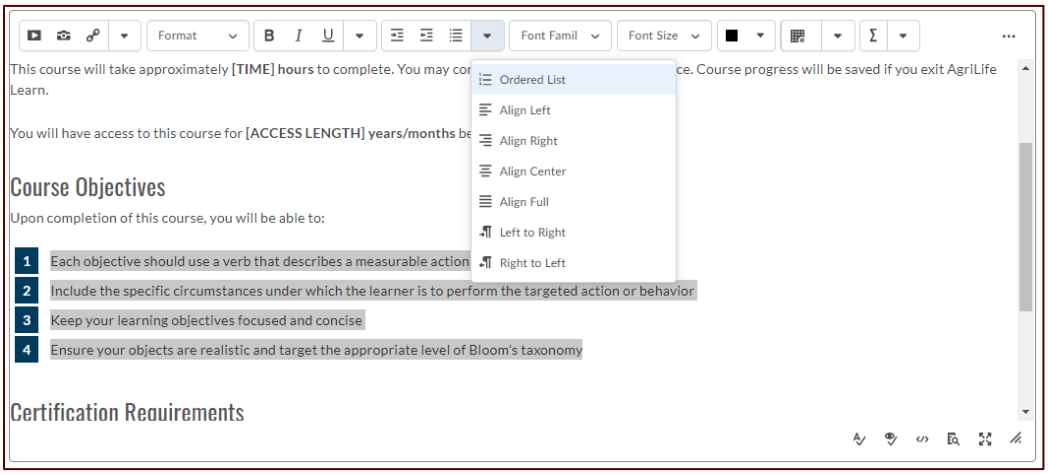
Brightspace

When creating content in Brightspace's rich content editor, consider the following:

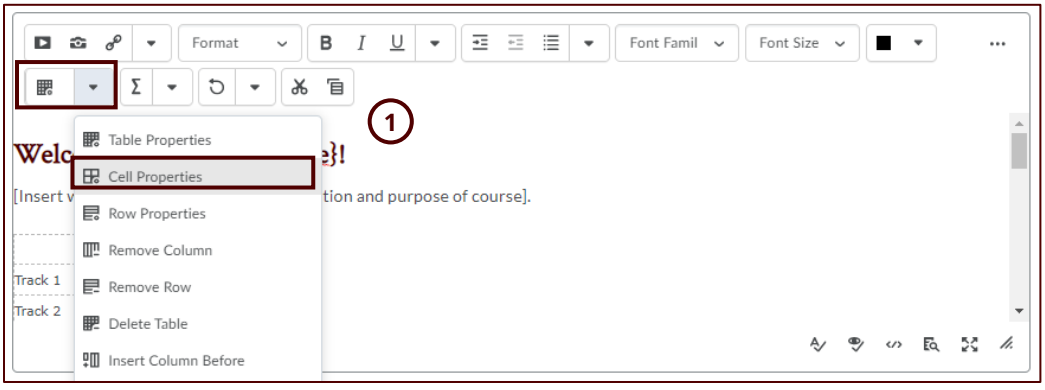
- Use heading structure so screen readers can navigate through the content.

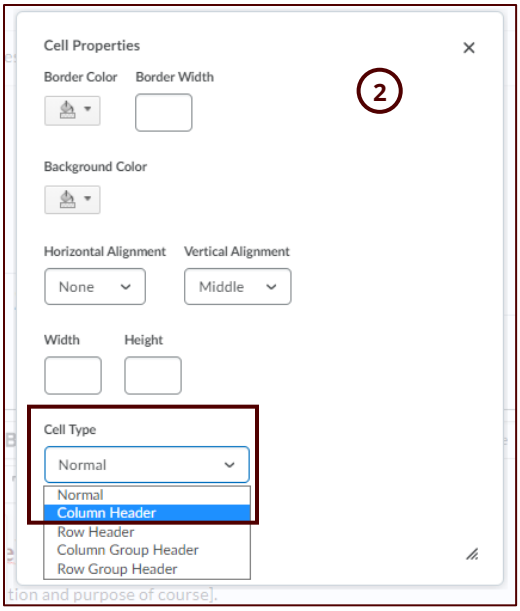


- Lists need to be formatted using the list tool.

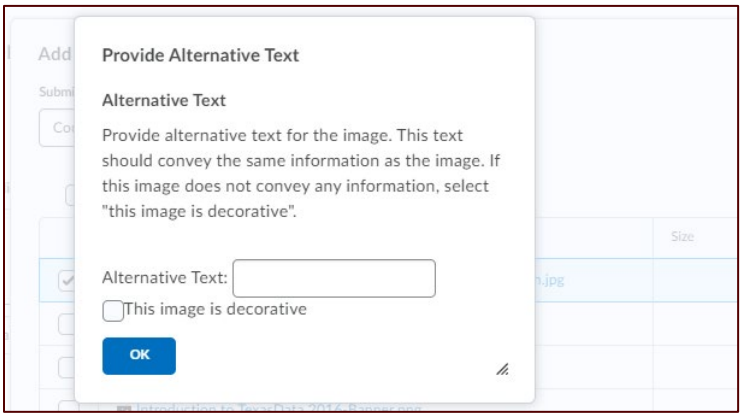


- Create tables with row/column headers.

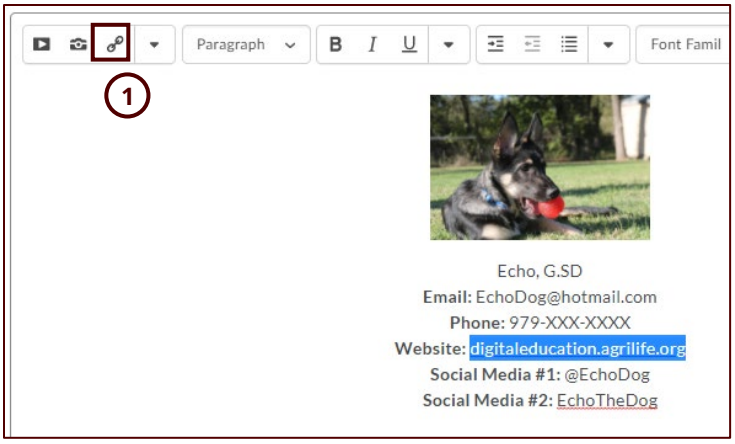


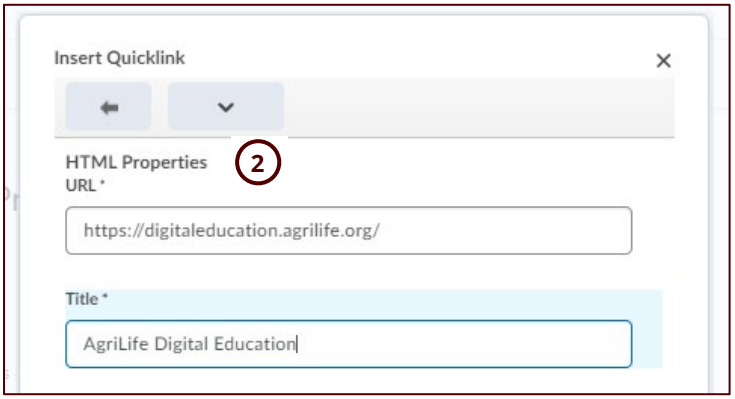


- Add alt text when inserting images and shapes.

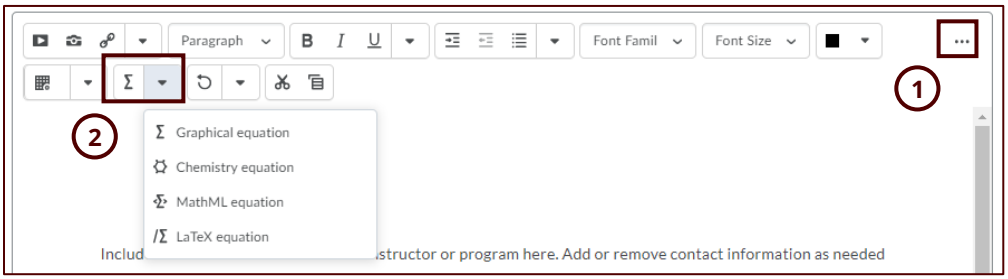


- Use meaningful hyperlink text.

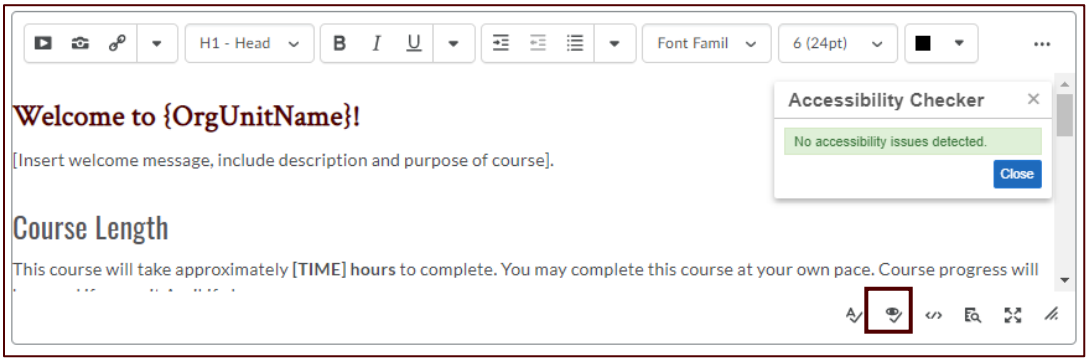




- Use math equations instead of images when needed.

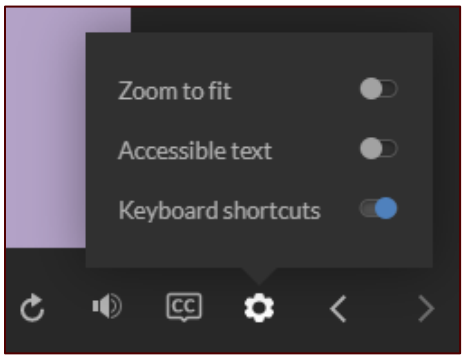


- Use sufficient color contrast.
- Use the accessibility checker to ensure everything is accessible.



Articulate Storyline

Storyline 360 was updated in early 2021 to support WCAG 2.1, Level AA, including the use of screen readers, keyboard navigation, and visible focus indicators. For any new projects created in Storyline in or after 2021, the following accessibility settings will be automatically added to the player: zoom to fit, accessible text, and keyboard shortcuts. These settings can be accessed by clicking the gear icon in the player window, as shown below.



In addition to these automatically added player settings, there are steps that need to be taken during development to ensure accessibility. When designing a course in Storyline, keep the following in mind (adapted from Storyline 360 How to Design an Accessible Course):

- Design for hearing impairments by adding closed captions, providing a transcript, and avoiding timed tests.
- Design for mobility impairments by providing alternatives for drag-and-drop interactions, providing keyboard-accessible alternatives for hover states, and avoiding timed tests.
- Design for visual impairments by adding alternative text, customizing focus order for each slide, using tables to structure text, identifying the course language for screen readers in your player properties, customizing text labels, allowing learners to skip repetitive player navigation elements, increasing player font size, providing text-based alternatives for animations,

providing alternatives for hover states and drag-and-drop interactions, and disabling video autoplay.

Storyline 360 Supports WCAG has a variety of accessibility how-to articles available, including importing closed captions, using tables to organize content, customizing the focus order of slide objects, and identifying the course language for screen readers, among others.

Qualtrics

While our service catalog does not include building evaluations in Qualtrics or designing evaluation questions, it is still important to make sure content with fillable form fields, such as surveys or quizzes, is accessible, as discussed in the Forms sections of this guide.

eCommerce

Marketing and promotion are handled by AgriLife's Marketing and Communications team. As a result, accessible marketing, although important, will not be covered in this guide. If you or your clients are interested in ways to best reach and connect with diverse audiences, both online and in-person, we recommend Bing's eBook, Modern Marketing is Accessible Marketing as a good place to start.

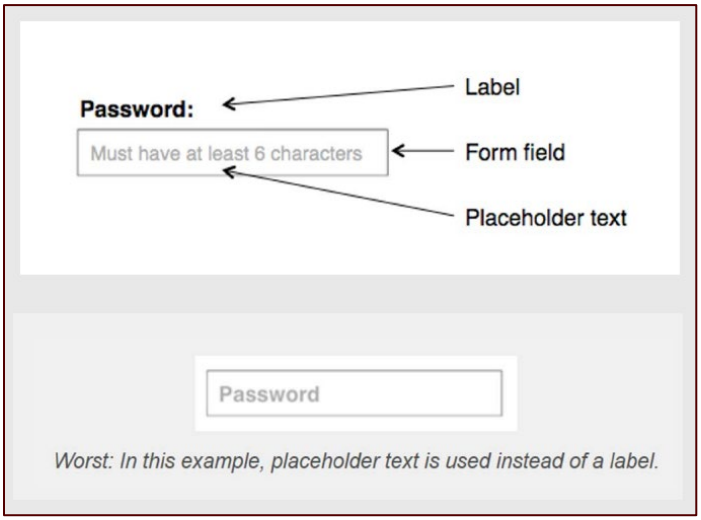
Product Systems

Forms

Forms used for login, registering, purchasing, and other forms of user interaction, need to be accessible. Keep the following in mind when creating forms (adapted from Bing's eBook, Modern Marketing is Accessible Marketing):

- Do not replace form labels with placeholder text. In the example below, the top half of the image shows ideal use of a label and placeholder text in a form, while the bottom half of the image shows a less accessible example.

- Light-gray placeholder text has poor color contrast against most backgrounds.
- Not all screen readers can read placeholder text aloud.



Web Forms

Keep the following in mind when creating forms used in websites and in web applications (from W3C Forms Concepts):

- Use the <label> element and, in specific cases, other mechanisms (e.g., WAI-ARIA, title attribute, etc.), to identify each form control. W3C Labeling Controls
- Use the <fieldset> and <legend> elements to group and associate related form controls. W3C Grouping Controls
- Provide instructions to help users understand how to complete the form and individual form controls. W3C Form Instructions
- Validate input provided by the user and provide options to undo changes and confirm data entry. W3C Validating Input
- Notify users about successful task completion, any errors, and provide instructions to help them correct mistakes. W3C User Notifications

- Divide long forms into multiple smaller forms that constitute a series of logical steps or stages and inform users about their progress. W3C Multi-page Forms
- Use stylized form elements and other progressive enhancement techniques to provide custom controls. W3C Custom Controls

Websites

WebAIM has an online WAVE Web Accessibility Evaluation Tool that allows you to enter a web page address to be checked for possible accessibility issues. WebAIM also has WAVE Firefox and Chrome Extensions available for testing accessibility directly within your web browser. For more advanced information, Udacity has a free Web Accessibility course designed for web developers.

Conclusion

It is important to remember the human aspect of accessible design. eLearning Brothers hosted a webinar, Accessible or Interactive, that demonstrates this concept well. The first half of this webinar includes a walkthrough of a specific online, interactive exercise through the lens of individuals with different disabilities using different assistive technologies. While the example exercise and subsequent solutions discussed are somewhat instructional design-specific, an important takeaway is that making content accessible does not mean making it boring or less interactive. Think of these accessibility and useability guidelines as a tool to help you, not hinder you, in creating accessible, useable content.

Resources and Training Recommendations

This section includes links that were not included in this guide but still might be useful in building your knowledge of accessibility. We recommend checking back frequently for additions to these lists. If you have any resource or training/webinar recommendations that have not been mentioned in this guide, or feedback on this document, please reach out to Shireen Jahedkar and Weiqi Liu by emailing ade@ag.tamu.edu and including "accessibility" in the subject line.

Additional Resources

- QM White Paper: Course Design for Digital Accessibility
- D2L Google Doc: Five Free Tools to Help You Improve the Accessibility of Online Courses
- QM Accessibility and Usability Resource Site (must create an account to access)
- QM Success Stories Series: Interaction and Accessibility: Using Internal QM Reviews to Meet Federal Guidelines (must create an account to access)
- TAMU IT Accessibility Conformance Evaluation (ACE) Tool (for Academic IDs)
- Screen readers and other assistive technologies:
    - NVDA (free, lightweight, open-source for Windows)
    - VoiceOver (built into Mac, iOS, and iPod/iPad),
    - JAWS (cost option for Windows with demo version available)
    - ZoomTexts (screen magnifier)
    - Dragon NaturallySpeaking (speech recognition)

Training/Webinar Recommendations

- D2L Fusion 2020 Presentation: Don't Fear the WCAG
- "Accessibility in Aggieland" Webinar Series

References

The following resources were linked throughout this guide and are listed below in order of appearance:

- TAMU IT Accessibility Introduction to Web Accessibility
- Section 508 Checklist
- EIR Accessibility from Texas Department of Information Resources
- Americans with Disabilities Act (ADA) website by Employee Relations
- Current W3C WCAG Recommendation
- TAMU IT Accessibility Web Accessibility Standards
- Context is Everything by WebAIM: Alternative Text
- Complex Images Tutorial by W3C
- W3C WCAG Captions/Subtitles
- Otter
- W3C WCAG Transcribing Audio to Text
- W3C WCAG Transcripts
- W3C Example Descriptive Transcript
- Video with Description Integrated into Audio
- W3C Audio Content and Video Content
- W3C WCAG Where to Put Transcripts
- A 15-point checklist to make accessible links
- Screen Readers Cannot Always Read What is on the Screen
- Guideline 1.4 – Distinguishable
- AgriLife Brand Guide
- W3C WCAG Use of Color
- Color contrast checker from WebAIM,
- Color contrast checker from Juicy Studio

- WebAIM: Contrast and Color Accessibility
- USWDS Color and Accessibility
- WebAIM Typefaces and Fonts
- OpenDyslexic extension for Chrome
- BeeLine Reader
- W3C WCAG Resize Text
- An example from uiAccess
- WCAG 2.1 Success Criterion 1.4.12 Text Spacing
- Datayze Readability Analyzer
- WebFX Readability Test Tool
- Readable
- Readability Score Chrome extension
- Make your Word documents accessible to people with disabilities
- Heading in Word (1:25 minutes)
- Alt Text in Word (2:07 minutes)
- Hyperlinks in Word (2:09 minutes)
- Accessible Text Format in Word
- Accessible Table in Word (2:18 minutes)
- Make your PowerPoint presentations accessible to people with disabilities
- Accessible Templates in PowerPoint (2:17 minutes)
- Reading Order in PowerPoint Slides (2:29 minutes)
- Design Slides for People with Dyslexia (3:50 minutes)
- Alt Text in PowerPoint (1:38 minutes)
- Hyperlinks in PowerPoint
- Accessible Text Color in PowerPoint
- Table Headers in PowerPoint

- Use Captions, Subtitles, and Alternative Audio Tracks in Videos
- Make your Excel documents accessible to people with disabilities
- Templates in Excel (2:28 minutes)
- Rename Sheet Tabs in Excel
- Delete Sheet Tabs in Excel
- Accessible Tables in Excel (4:24 minutes)
- Accessible Charts in Excel (4:12 minutes)
- Hyperlinks in Excel
- Accessible Text Color in Excel
- Create more accessible email messages in Outlook (Video Tutorials)
- Make Outlook emails accessible to people with disabilities (Text Instructions)
- Accessibility Overview of Microsoft Teams
- Video introduction of PDFs
- Recognize text in scanned documents
- Correct OCR text in PDFs
- LinkedIn tutorial: from Word to PDF
- LinkedIn tutorial: from Excel to PDF and from PowerPoint to PDF
- Saving an accessible PDF in Microsoft Office
- Adobe InDesign Accessibility
- Create a tagged PDF from a web page
- PDF Accessibility - Make Accessible with Action Wizard
- Making an Existing PDF File Accessible
- Creating Accessible PDFs
- Using the Acrobat Pro DC Accessibility Checker
- The UDL Guidelines
- TED talk by Michael Nesmith

- Universal Design for Learning Implementation and Research Network
- Universal Design for Learning Implementation
- Instruction examples of Universal Design
- "Accessibility in Aggieland" webinar series
- Live binder on UDL (password is TAMUUDL)
- Blackboard Ally Help page
- Storyline 360 How to Design an Accessible Course
- Storyline 360 Supports WCAG
- Division of Marketing and Communications
- Modern Marketing is Accessible Marketing
- W3C Forms Concepts
- W3C Labeling Controls
- W3C Grouping Controls
- W3C Form Instructions
- W3C Validating Input
- W3C User Notifications
- W3C Multi-page Forms
- W3C Custom Controls
- WAVE Web Accessibility Evaluation Tool
- WAVE Firefox and Chrome Extensions
- A Free Web Accessibility Course
- ADE Educational Publishing Style Guide
- Accessible or Interactive Webinar

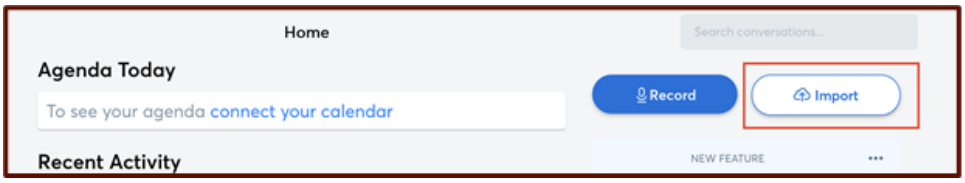
Appendix

Captioning in Otter

Otter is a transcription service that has a variety of functions, including recording and transcribing conversations, meetings, or interviews into searchable and shareable notes, as well as transcribing existing recordings. The ADE team in particular uses Otter for transcribing existing audio and/or video files to be used to create captions.

Import Existing Audios/Videos to Otter.ai

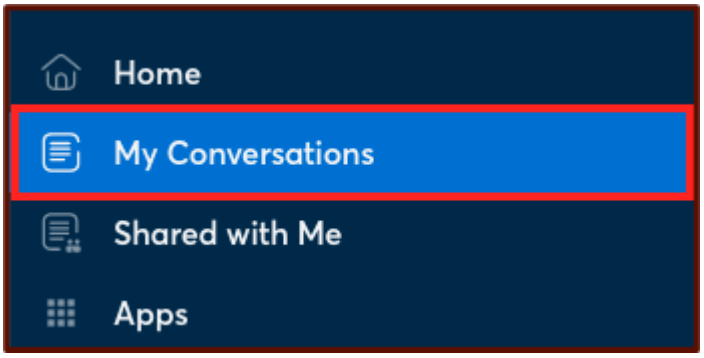
Step 1: Sign in by going to Otter.ai. After you sign in, select **Import** from the top right corner.



Step 2: Drag and drop audio/video files or select **Browse File**. Files MUST be in the following formats before importing.

- **audio:** mp3, aac, wav, m4a, wma
- **video:** mp4, avi, mov, wmv, mpg

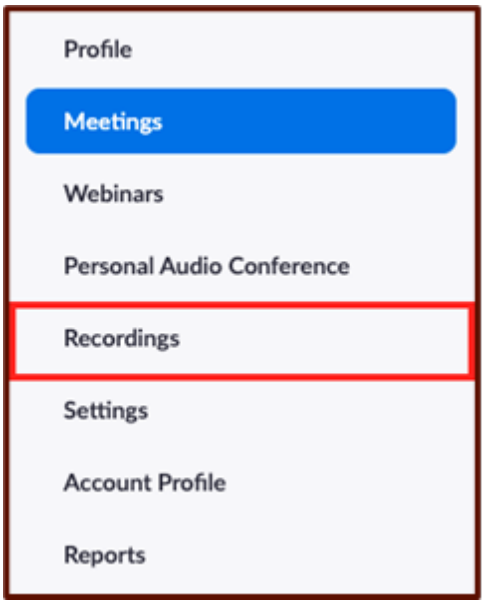
Step 3: Click **Done** once the file has finished uploading. The file will appear in the **My Conversations** section on the left-hand side menu.



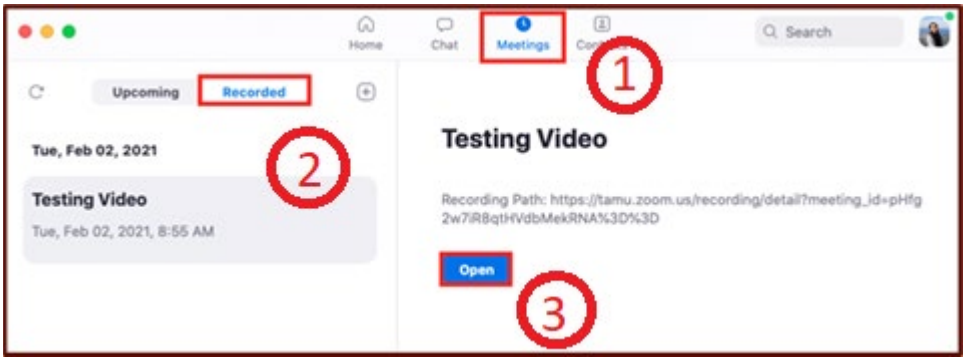
Import Zoom Recordings to Otter.ai

If you do not have an existing audio or video on your computer but you have recordings in Zoom, you can follow the steps below.

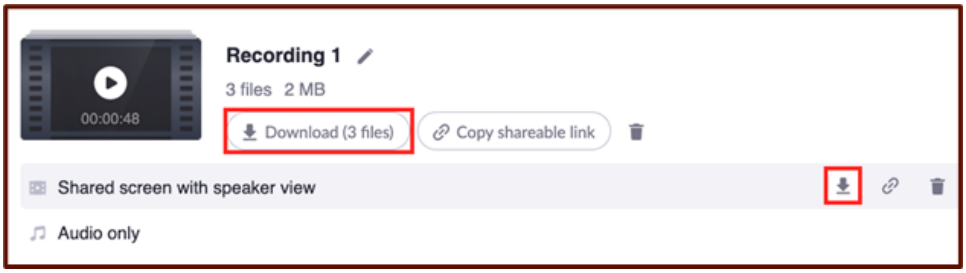
Step 1: Go to TAMU Zoom website and sign in. Then, Click **Recordings** on your left-hand side menu. Afterwards, click into the recording that you want to download.



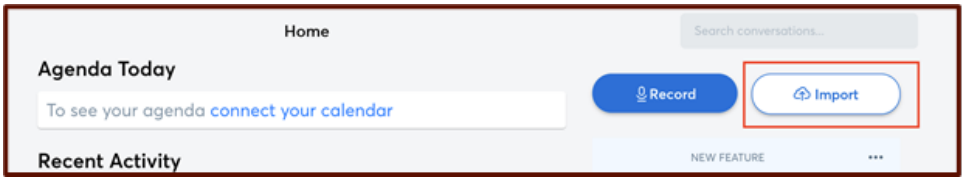
NOTE: If you use the Zoom Desktop app, once you open it, on the top menu, select **Meetings.** Then, on the left-hand side, select the **Recorded** tab. Afterwards, click **Open** to get access to the recording on the Zoom website.



Step 2: Download the recording by clicking the downward arrow.



Step 3: Sign into your Otter.ai account. Select **Import** from the top-right corner:



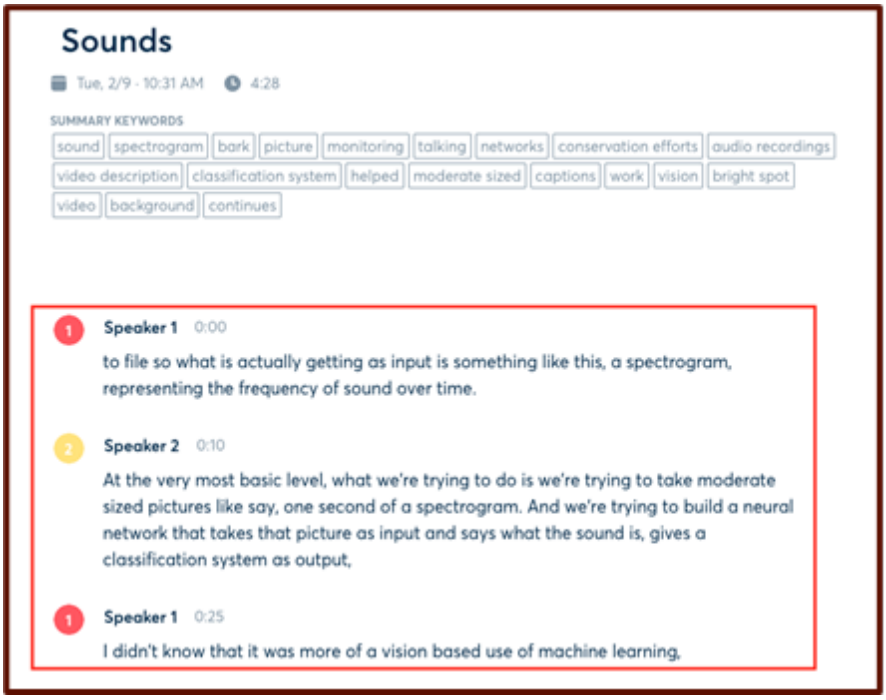
Step 4: Drag and drop audio files or select **Browse File**. Files MUST be in the following formats before importing.

- **audio:** mp3, aac, wav, m4a, wma
- **video:** mp4, avi, mov, wmv, mpg

Click **Done** once the file has finished uploading.

Edit Captions in Otter.ai

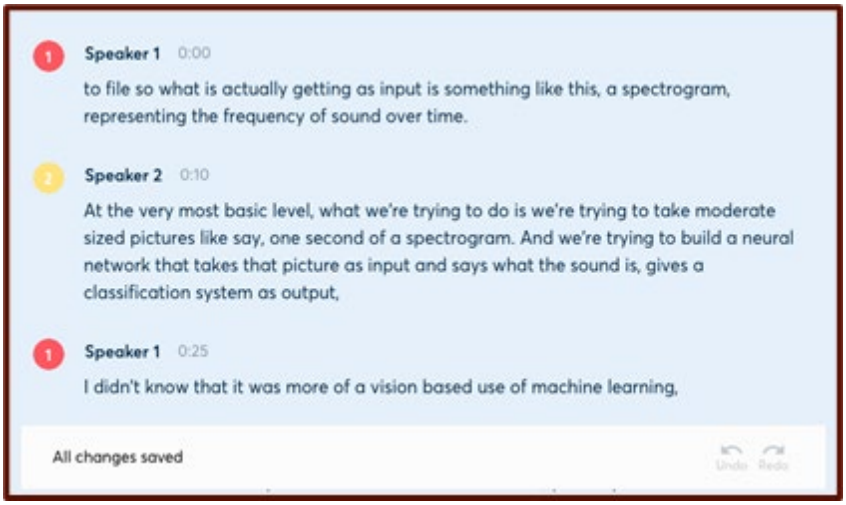
Once you import your media, Otter.ai will start captioning. After it is done, you can get access to the captions by selecting My Conversations from the left-hand side menu and clicking into the video. The captions will appear as follows:



Please note that the captions are generated by Otter.ai's automatic speech recognition (ASR) technology, which means Otter.ai converts speech to text by machine. Therefore, it is necessary to manually proofread the whole captions to make sure it is accurate. To start editing captions, please follow the steps below:

Step 1: Click **Edit** at the upper right corner.

Step 2: Begin making edits in the blue text box that appears.



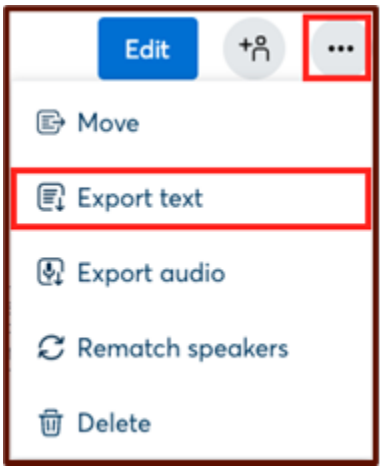
Step 3: Once you are finished, click **Done** at the upper right.

Export Captions in Otter.ai

Export as SRT file

After the captions are ready, we can export it as a SRT file and then import it with the media together to different hosting platforms.

Step 1: Select the three dots at the top-right corner, and then the **Export Text** option from the drop-down menu.



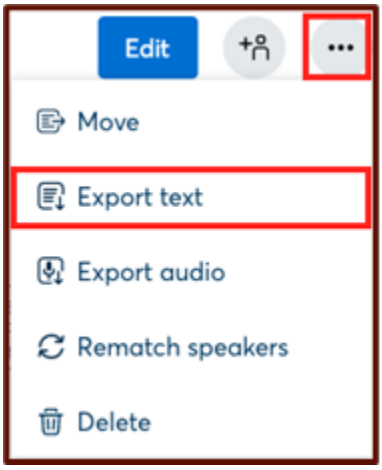
Step 2: Select **SRT(PRO)** for the export format and leave other settings as default.

Step 3: Click **Continue** at the upper right to export the file. The file will automatically download to your device as a SRT file.

Export as TXT or DOCX File

After the captions are ready, we can export it as either TXT or DOCX format to create a transcript.

Step 1: Select the three dots at the top-right corner, and then the **Export Text** option from the drop-down menu.



Step 2: Select **TXT** or **DOCX** for the export format and switch off **Include speaker names** and **Include timestamps** buttons.

Step 3: Click **Continue** at the upper right to export the file. The file will automatically download to your device.

Advanced Settings in Otter.ai

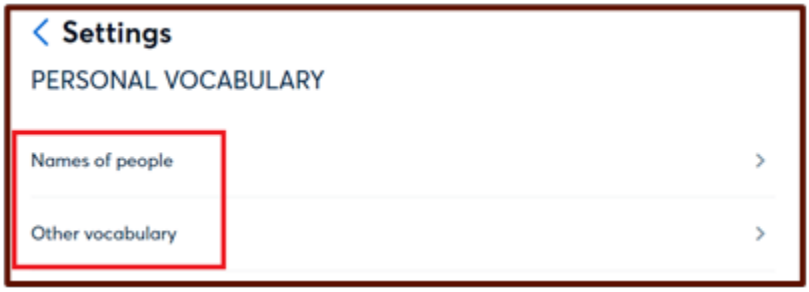
Use Custom Vocabulary in Otter.ai

Custom Vocabulary is best used for Otter.ai to recognize uncommon jargon, acronyms, and names of people, products, and companies by adding these words to their accounts.

Step 1: From the drop-down menu on your profile photo, click **Account Settings.**

Step 2: Select **Manage Vocabulary**.

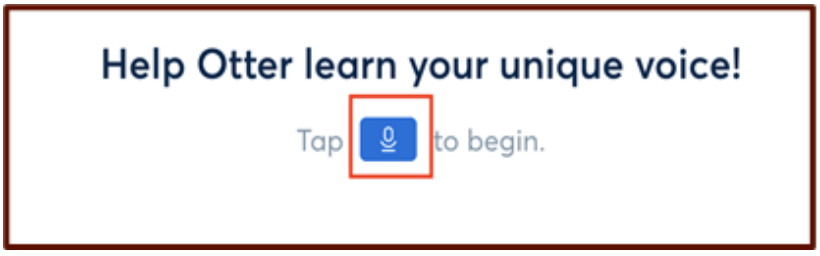
Step 3: Then, you can add **Names of people** or **Other vocabulary** by going into its category.



Speaker VoicePrint in Otter.ai

VoicePrint can be used to have Otter.ai recognize your voice for future conversations.

Step 1: From the drop-down Menu on your Profile Photo, click **Account Settings**, and then select **My VoicePrint.**



Step 2: Begin Recording. A brief script will be provided for you to read aloud.

Step 3: Select **Save Recording**. Otter will now be able to recognize your voice for future recording.

Captions in Vimeo

Vimeo is a video hosting platform which cannot produce captions for uploaded videos but does have the option to upload captioning files manually. This means that you will first need to generate captions, through a program like Otter, before manually uploading them into Vimeo.

Export Captions in Otter.ai

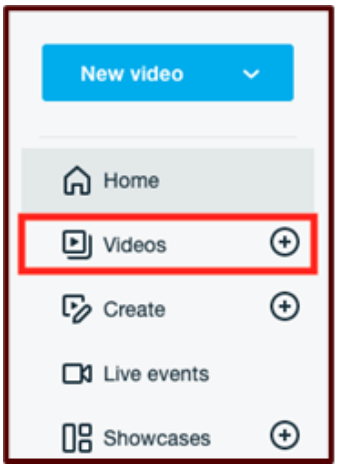
After you have followed the export captions instructions in the Otter Captioning Guide, complete the following steps using your downloaded SRT file(s).

Upload Captions in Vimeo

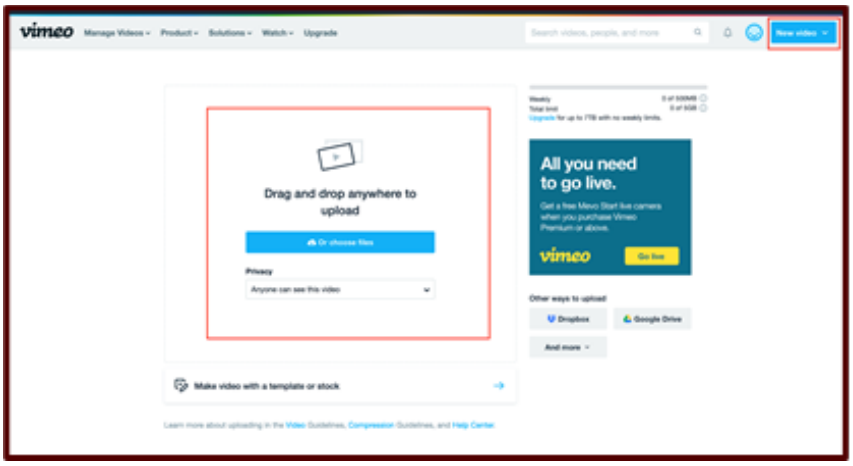
Step 1: Visit https://vimeo.com and login to your account.

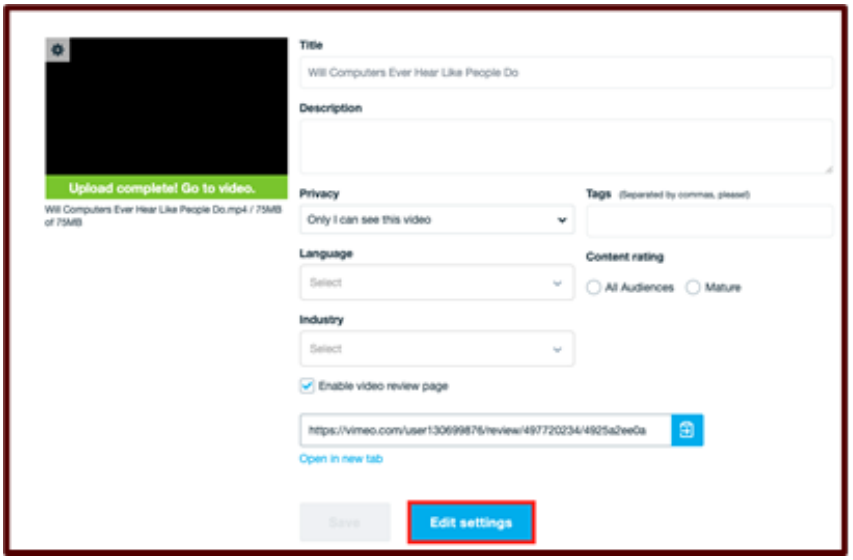
Step 2:

- Select **Videos** from the left-hand menu to access all your videos. Then, click into the video that you want to edit to access the settings page.

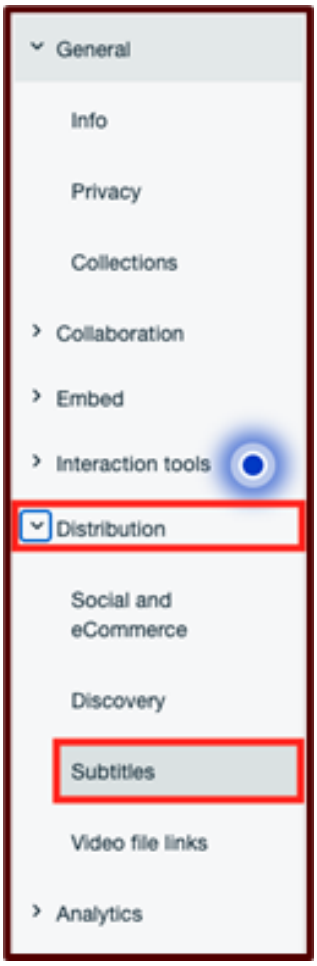


- Or select the **New video** button at the top right of your screen or **Drag and Drop** your video on the center of the page to upload a video. Once the process is complete, click **Edit settings**.

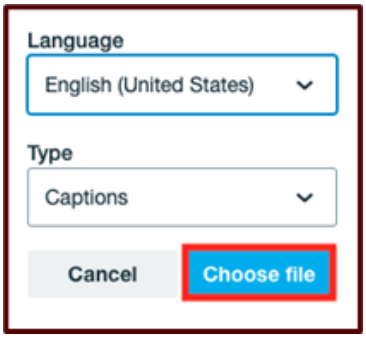




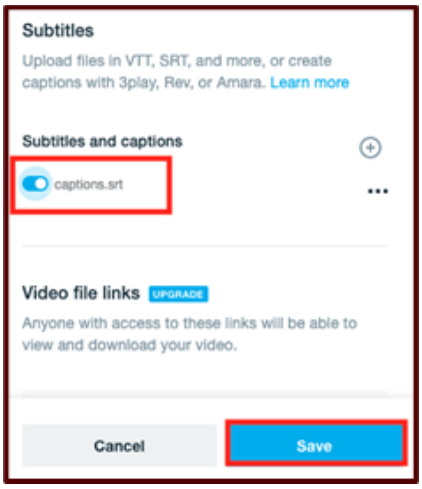
Step 3: Once you are in the settings page, from the left-hand menu, select **Distribution**, then **Subtitles**.



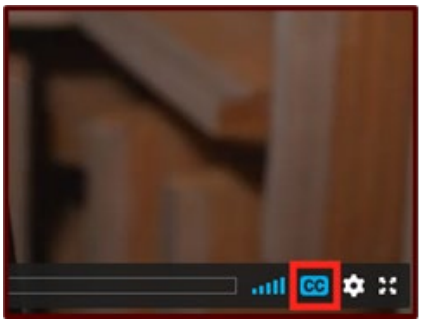
Step 4: Next, select the language, and select **Captions** from the dropdown menu under **Type.** Then, you will be able to select the SRT file from your computer by clicking **Choose file**.



Step 5: Once the file is uploaded, switch on the button before it and click **Save** at the bottom.



Step 6: Your video is now ready with captions. Navigate back to the **Videos** page. From there, click into the video, and select the **CC** button at the bottom right to display captions.



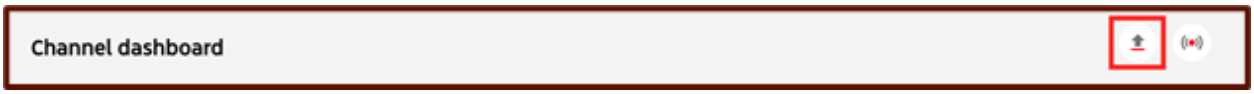
Captioned Videos in YouTube

After you have followed the instructions in the Otter Captioning Guide, complete the following steps using your downloaded SRT file(s) and your media file. You can upload these files together to YouTube.

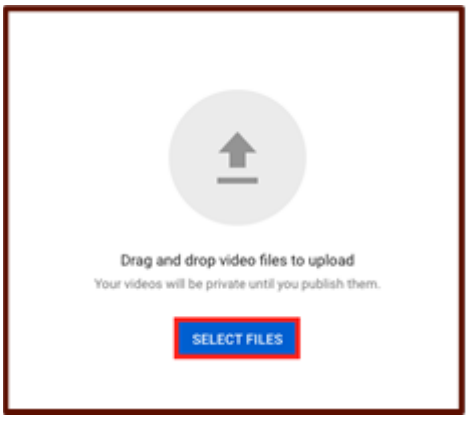
Upload Videos with Otter.ai Captions in YouTube

Step 1: Sign into YouTube Studio.

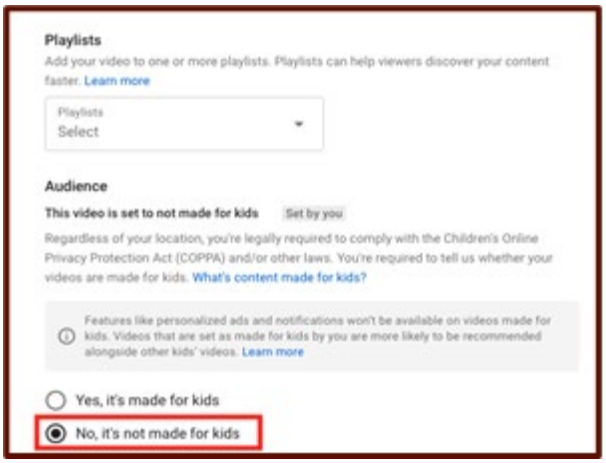
Step 2: After you sign in with your TAMU account, click the **Upload Video** icon at the top right.



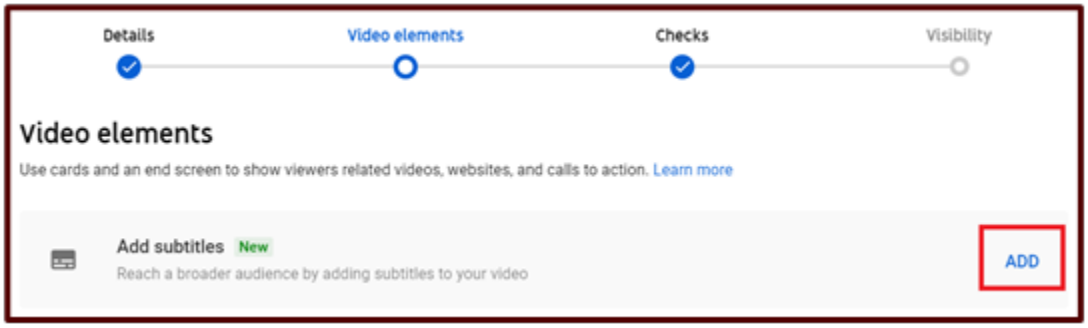
Step 3: Next, select the video file from your computer by clicking **SELECT FILES**.



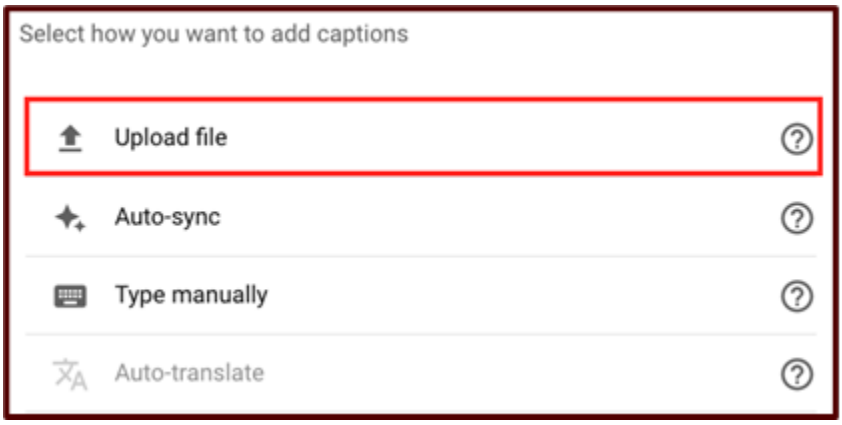
Step 4: After you select the video file, a window will open. Here, you can customize the settings for your videos, such as Thumbnail, Playlists, and Audience. It is recommended to select **No, it's not made for kids** for the audience option. Then, click **NEXT** at the bottom right to proceed.

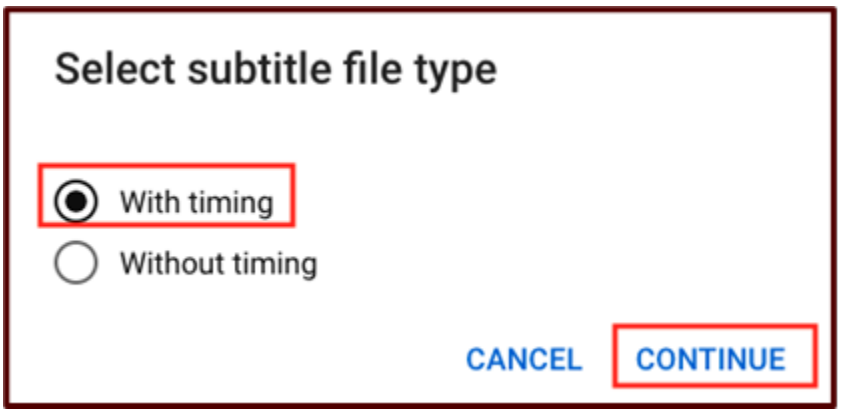


Step 5: The video elements page allows you to add subtitles/captions. Click **ADD** at the right.

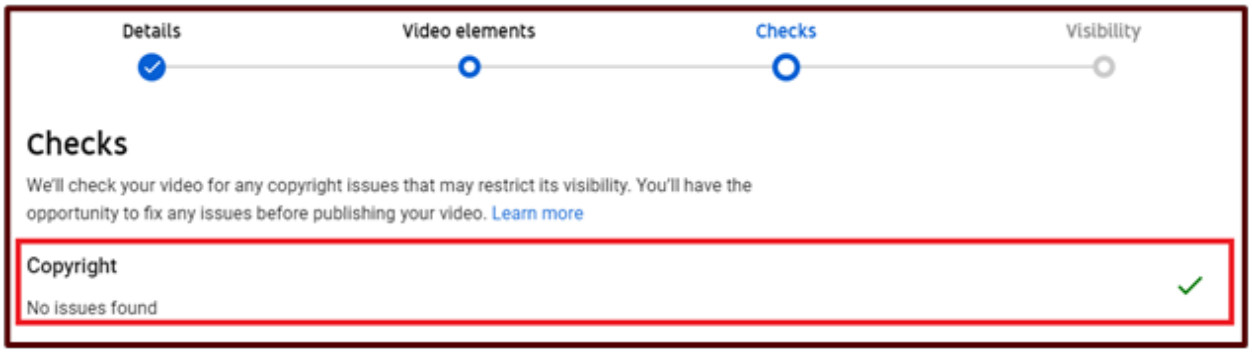


Step 6: Click **Upload file** to import the SRT file that you downloaded from Otter. Then, go with the **With timing** option and click **CONTINUE**. Next, click **DONE** at the upper right corner and then click **NEXT** at the bottom right.

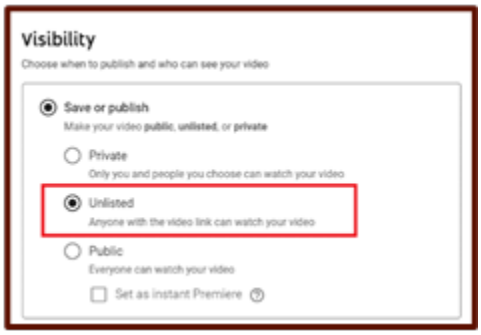




Step 7: The third page will check whether your media has copyright issue. If not, you will see **No issues found** with a green check. Then, you can proceed to the last page.



Step 8: On the last page, you will need to set up the visibility for your video so choose the one that suits your needs. It is recommended to choose the **Unlisted** option if you want to share the video with your students only.



Step 9: Click **SAVE** at the bottom right, and your uploaded video with closed captions will appear on your Channel Content on the Studio page.