

A UCSC Guide to Common Accessible Technologies

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Creating Accessible Course Materials

All materials distributed to students, whether in-class or online, in hard copy or electronic format, by faculty or teaching assistant, must be accessible to those who use accessible technology software, such as screen readers.

A screen reader is a software program that provides feedback about what is displayed on a screen to a computer user, using non-visual means such as text-to-speech. This adaptive technology may be utilized by users who are blind and/or visually impaired, as well as by users who have cognitive or learning disabilities.

- To learn more about screen readers, see the **Screen Reader Quick Start Guide**, created by Kevin Andrews at the Disability Resource Center: <https://drc.ucsc.edu/faculty-and-staff/fac-staff-overview/KevinAndrewsScreenReaderQuickStartFinal.pdf>.
- To experience how screen readers work, and to become familiar with common challenges that users might face when they encounter digital materials that are not accessible, visit these **video resources**:
 - Screen Reader Demo from UCSF: <https://www.youtube.com/watch?v=dEbl5jvLKGQ>
 - Screen Reader Demo from UNC: <https://www.youtube.com/watch?v=92pM6hJG6Wo&t=2s>
- See the **Disability Resource Center's overview** of creating accessible course materials: <https://drc.ucsc.edu/faculty-and-staff/fac-staff-overview/creating-accessible-course-materials.html>

Accessible PDFs and Scanned Electronic Files

A common challenge in creating accessible learning environments is ensuring that PDFs and scanned documents, such as course readings that are scanned from printed texts, are accessible.

An important characteristic of **accessible PDF files** is the inclusion of tags, which provide a hidden structured, textual representation of the PDF content that is presented to screen readers. Without these tags, PDFs can present as blank and content-less images to screen readers, and a student who uses a screen reader will then be unable to read the content.

When creating a document that will be converted into a PDF, it is important to ensure that the document is accessible *before* exporting it as a PDF. Creating an accessible Word document, for example, means providing alternative text for images, proper headings, and clearly identified hyperlinks.

The following resources can guide you in creating accessible, tagged PDFs when you convert any document to a PDF:

- **WebAim** provides a detailed guide for creating accessible documents that can be converted into accessible PDFs: <https://webaim.org/techniques/acrobat/> and <https://webaim.org/techniques/acrobat/convertimg>
- **Adobe** provides a guide for utilizing the “Action Wizard” that can help you check the accessibility of your PDFs when using Adobe Acrobat Pro: <https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html>

Scanned documents and images, unless converted to accessible digital documents, are also unreadable by screen readers. One way to tell if a PDF of a scanned text is an image rather than readable text, is to try to copy and paste the text from the PDF into Word. If you are unable to execute that function, then you are working with a scanned image of text that is not readable by a screen reader.

How to make scanned documents more accessible:

1. Open the PDF of your scanned document (e.g. a book chapter) in Adobe Acrobat.
2. Click on the “Edit PDF” tool on the right pane. Acrobat will automatically apply optical character recognition (OCR) to your document and convert it to a fully editable copy of your PDF.
3. You may need to clean up the document by deleting any shadows that were created by the scanner. These are read as images when applying OCR to a PDF, and can be picked up by a screen reader. Delete extraneous images by clicking the box around the image and deleting the box.
4. Choose File > Save As and type a new file name for your editable PDF.

Read more about using Adobe to apply OCR to scanned documents:

<https://acrobat.adobe.com/us/en/acrobat/how-to/ocr-software-convert-pdf-to-text.html>

The Disability Resource Center works with instructors and affiliated students to ensure that all course documents, including scanned texts, are converted to accessible formats (see [Working with the Disability Resource Center to Create Accessible Texts](#) in this guide). If you have questions about accessibility checking and document conversion, the DRC can provide information and guidance (drc@ucsc.edu, 831-459-2089)

Additionally, there are **online tools and resources** that can guide you in converting a range of electronic files into accessible formats.

- **Sensus Access** is a program that converts electronic files into an accessible/readable version. Sensus Access can convert the following formats: .DOC, .DOCX, .PDF, .PPT, .PPTX, .TXT, .XML, .HTML, .HTM, .RTF, .EPUB, .MOBI, .TIFF, .TIF, .GIF, .JPG, .BMP, .PCX, .DCX, .J2K, .JP2, .JPX, .DJV and .ASC. This program is free to users with a UCSC email address: <https://its.ucsc.edu/accessibility/sensusaccess/tool.html>
- **A helpful Guidelines to Web Accessibility chart**, including guidance for how to create accessible PDFs, Word documents, and PowerPoint slides, is available online via Portland Community College: <https://www.pcc.edu/instructional-support/wp-content/uploads/sites/17/2017/11/pcc-a11y-hb-lores-tagged.pdf>

Working with the Disability Resource Center to Create Accessible Texts

Many UCSC students require course texts in alternate formats. For example, students with print disabilities require texts in Braille, large print, electronic and/or audio formats. The Disability Resource Center has a dedicated team that helps to convert textbooks, articles, course readers, and other printed material into digital formats. This team works in advance of each quarter and then throughout the first weeks to convert required readings (textbooks, course readers, etc.) into formats that are usable by students with disabilities.

To facilitate the DRC's conversion of course materials into accessible formats, select textbooks and readings, or update existing course materials, **at least five weeks before classes start**. A delay in providing updated course materials results in delays for students, a challenge that is difficult to overcome in a 10-week quarter.

The quality conversion of print and electronic materials into accessible formats depends on instructors providing **clean copies and scans of articles** for course readers, library holdings, and Canvas postings. Scans that are crooked or that include underlining or notes in the margins make it difficult for conversion programs to create accessible documents.

Using Captioned Videos

Select and use video content (DVDs, YouTube videos, etc.) that has closed captioning. Best practice is to always turn captions on.

Instructors can call the Disability Resource Center to gain guidance on captioning. There is not currently funding for creating captions through the DRC, and the instructions below can guide you to create your own caption files.

How to Caption Your Own Videos

If you are creating videos to use in class or on the UCSC website, they must be captioned. Here are some resources and instructions for getting this done. For all of the following approaches, you will need to create a caption file and then apply it to the video.

A. Do it Yourself Captions with YouTube

One option is to caption your video files yourself using YouTube to create the caption file. One option is to create a timed transcript file yourself, edit it for correctness, and then apply it to the video. Another option is to use YouTube's automated captioning and then review and edit the results. Either way, reviewing and editing the captions is an essential step.

For step-by-step instructions for do-it-yourself captioning via YouTube, visit this page: <https://support.google.com/youtube/answer/2734796?hl=en>

B. Creating Caption Files through Captioning Services

To generate caption files that are proofread and ready to be applied, UCSC uses two captioning services, **3Play Media** and **Rev.com**. For both services, the primary function is to provide a caption file. This is just a text file; it is not a completed captioned video. The caption file can be embedded in the video file or added to the video file using various methods, which are described below.

3Play Media

UC has system-wide agreement with 3Play Media for the purpose of getting media captioned.

- The current price is \$2.25 per minute for a 3-business-day turnaround. The per minute price increases if you need a faster turnaround. This price includes a caption file in the format you request. If you want a completed captioned video file, you must order either closed caption encoding or open caption encoding when your caption file is ready. Encoding is an additional \$10/file.
- You can set up a purchase order (PO) with 3Play through CruzBuy and Procurement Services. Once you set up your account, you will be able to use the 3Play Media Account System to upload video files to 3Play for captioning.

- 3Play Media has numerous short tutorials on how to use their service. Key tutorials are included below. These are typically only a minute or two in length.

Getting Started with Your 3Play Account:

<http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/0/-5CDUjXAXEM>

Step 1: Upload Videos to 3Play

See the following videos on the 3Play site to get started with uploading files for captioning. There are four options for how you upload files to 3Play: upload files from your computer, from links, from a video platform, and via FTP.

- **Uploading Video Files from Your Computer:** http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/1/eU_x42O8WT8
- **Uploading Video Files via Links:** <http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/2/9qm7sLCr5Ho>
- **Uploading Video Files from a Video Platform:** <http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/3/jt4PmqPPjxg>
- **Uploading Video Files via FTP:** http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/4/d4VaBg-HW_I

Step 2: Download Caption Files from 3Play

Once a caption file has been created for your video, you need to download it. Remember that this is simply a text file with the captions and time coding. It is not a completed video file. For YouTube and Vimeo, you can easily encode the captions to your video file yourself. More on this in the section on Encoding.

- **A Note on Choosing Caption File Format:** You can choose from a variety of file formats when you download your caption file. The .srt format is a common option. It works with YouTube and Vimeo, as generally works well for encoding the captions to an mp4 file. Each platform should have a list of accepted caption file formats on their site. Here is a list of common caption file formats: <http://www.3playmedia.com/faq-category/captions-transcript-subtitle-formats/>
- **Downloading Transcripts and Caption Files:** <http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/5/5CJu7b5pqHA>

Step 3: View and Edit Captions in 3Play

You can check your captions after they've been processed to see if they are accurate. This can be especially important in checking for correctly spelled names and technical vocabulary.

- **Viewing and Editing Captions:** <http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/6/wqyYsExSRbI>

Rev.com

Rev.com is a service that provides transcripts for audio files, as well as captions and subtitles for videos. They will also do translation.

- Rev charges \$1/minute no matter the length of the video. Files of 30 minutes or less can be completed in 24 hours or less. Files of more than 30 minutes take longer, and there is no option to expedite your order. We have found that videos of about 60 minutes are

completed in a couple of days. Some 3-hour long videos the FITC has submitted have taken a week.

- The DRC currently has an account with Rev, so it would be simple to set up an account for your own department. If you just have a small number of videos to have captioned, you can use a credit card to pay as you go.
- Rev only provides caption files; they do not encode captions to video files and produce a finished closed- or open-captioned video.

Step 1: Upload Videos to Rev.com

Go to <https://www.rev.com/caption> and click on “Get Started.” There you can choose from the following options:

- Upload files from your computer.
- Share a link to a public web address.
- Pull videos directly from your YouTube or Vimeo account.

Step 2: Download Caption Files from Rev

- Depending on how your notifications are set (go to Settings to make changes), you will receive an email letting you know when your file is complete.
- Go to Rev.com and, from the menu, choose Order History. You will find your completed caption file there.
- Click on the file in Order History. Then click “Download” at the upper right. A pop-up will appear that gives you the file formats from which to choose. You can choose as many as you like.

Step 3: View and Edit Captions in Rev:

- If you want to check the captions before you download, click on the completed caption file in Order History, and then click on “Preview.” You can watch the video with the captions.
- If you see errors of any kind and want to fix them, close out the preview and click on “Edit.” Make your changes and save. Then you can download.
- We recommend that you not make major edits as it may affect the time coding. If you feel there is a significant need for change, contact Rev Support and ask for assistance. Also, if you make major edits to your video file after you’ve uploaded it for captioning, you will likely need to upload it again to be re-captioned.

C. What to Do Once You Have a Caption File

If you get a caption file from either Rev or 3Play Media, you have several choices in how you will use that caption file with your video, depending on what platform you are going to use to show the video.

1. 3Play:

- After your caption file is complete and ready for downloading, you can order caption encoding. <http://www.3playmedia.com/how-it-works/video-tutorials/#video-tutorial-1/35/ZQdwC4bUN3c>
- You can order either closed captions (must be turned on in your video player) or open captions (cannot be turned off). Remember that caption encoding costs and

addition \$10/file.

2. **Sidecar file:**

- You can store your caption file in the same folder as your video file. In some players (we recommend the VLC media player), if you store the two files this way, you can play the video and turn on the captions.
- Make sure the video file and caption file have the same name, for example, myvideo.mp4 and myvideo.srt. This works well if you are just going to show the video in class, and you remember to keep the two files together. It also works with certain video platforms.

3. **YouTube:** If you own the video that needs to be captioned, you can follow these steps:

- Go to your YouTube Video Manager.
- Next to the video you want to add captions or subtitles to, click the drop-down menu next to the **Edit** button.
- Select **Subtitles/CC**.
- Click the **Add new subtitles or CC** button.
- Upload your caption file:
 - Select **Add new subtitles or CC**. Choose the language for the subtitles or closed captions you want to create. You can use the search bar to find languages that don't automatically show in the list.
 - Select **Upload a file** and choose the type of file you have to upload.
 - Select **Choose file > Upload**.
 - Use the editor to make any needed adjustments to the text and timing of your new subtitle or closed caption.
 - Select **Publish**.

From: <https://support.google.com/youtube/answer/2734796?hl=en>

4. **Vimeo:**

- Add captions or subtitles to your video on the Advanced tab of your video settings.
- To upload a captions or subtitles file, click **Choose File**, specify the language, and indicate whether it's a caption or subtitle file.
- Once the file is uploaded, check the box next to the file name to activate it. Uncheck the box to deactivate the file, or click the red X to delete it entirely.

5. **Embed captions in video file yourself:**

- This can easily be done using an app such as Handbrake, which is an open-source video transcoder that has an option for adding captions. If you are interested in going this route, please contact Judith Gonzales at the DRC – gonzalej@ucsc.edu.
- If you use Premiere Pro to produce your videos, there is also an option available for adding a caption. See the software documentation for instructions.

Recording Lectures

Recorded lectures can provide students with the opportunity to review material at their own pace. They can also provide students with an alternative form of engagement if they are unable to attend a class.

- See the Faculty Instructional Technology Center's overview of Alternatives for Instruction, Engagement and Assessment: <https://its.ucsc.edu/fitc/course-dev/alternative-access.html>

For recording lectures on campus, there are several options:

Webcast

- The campus webcasting service records lectures and presentations and makes them available for viewing online.
- Visit this website and use the drop-down menu to find out which UCSC classrooms and lecture halls include webcasting capabilities: <https://its.ucsc.edu/webcast/classrooms.html>

Zoom

- The videoconferencing service Zoom (ucsc.zoom.us) can be used to record a lecture. See the how-to video here: <https://support.zoom.us/hc/en-us/articles/203741855-Cloud-Recording>

PowerPoint and Keynote

- The commonly used presentation tools PowerPoint and Keynote provide options for recording visual presentations with voiceover.
- View the tutorial for PowerPoint here: https://drive.google.com/file/d/0B8_KmGQbjsxjNENEbnlEQVBoTms/view.
- View the tutorial for Keynote here: https://drive.google.com/file/d/0B8_KmGQbjsxjNzFGTG5IRnlZZIU/view

Filming and Sharing Pre-Lecture Videos

- If you would like to film pre-lecture videos that can help you “flip” your classroom—that is, provide context and content before class in order to provide more time in class for student engagement and interaction—review the options for Asynchronous Participation Lectures here: <https://its.ucsc.edu/fitc/course-dev/alternative-access.html>. Consult with the Faculty Instructional Technology Center (FITC) to determine the best approach for your needs.
- Instructions for embedding pre-lecture videos into your course Canvas site can be found here: <https://docs.google.com/document/d/1gKslqf9iw1LQe4XthH40WQSFZgIyIj5h2sEwIcqDOGE/edit>