PowerPoint Essentials

Accessibility

A11y

Mac
Creating Accessible PowerPoint Topics

- Readability
- Slide Layouts
- Slide Reading Order
- Outline View
- Alternative Text
- Captioning Videos

- Link Text
- Color
- Tables
- Accessibility Tips
- Accessibility Checker
- Converting to PDF
What is Assistive Technology?

Assistive Technology (AT) are “products, equipment, and systems that enhance learning, working, and daily living for persons with disabilities.”

Screen Readers
Magnification Software
Speech Recognition
Trackball Mouse
Keyboard

Zoom Text
Braille Computer Keyboard
Captions/Subtitles
Captioned Telephone
Video Relay Services

Deaf Caller

Hearing Caller

Sign Language Interpreter
Video Relay Services (VRS)
Captioning Videos

Per federal and state law, and CSU policy, instructional media (e.g., videos, captured lectures, recorded presentations) must have captions. This includes instructional media used in classrooms, posted on websites or shared in Canvas.

- All students who are enrolled in a course must be able to access the content in the course.
- **Faculty:** Funding is available to help faculty generate captions and transcripts for instructional media. Materials should be submitted **at least six weeks** in advance of their use in instruction.
- **Staff:** For CSUN staff who do not provide classroom material, there is a cost through chargeback. For information on the chargeback, email ncod@csun.edu.

[Link to CSUN captioning website]

[Video thumbnail: 'and together, as Matadors, we will move mountains.']

[Website: csun.edu/captioning]
What are Screen Readers

Screen readers are a form of assistive technology (AT) software that enables access to a computer, and all the things a computer does, by attempting to identify and interpret what is being displayed on the computer screen using text-to-speech. Screen readers can only access and process live text.

- Provides access to someone who is visually impaired, mobility or has a learning disability to access text on the screen.
- Offers same level of independence and privacy as anyone else.
Types of screen readers

Screen reader program for Microsoft Windows that allows blind and visually impaired users to read the screen either with a text-to-speech output or by a refreshable Braille display. NVDA screen reader can be downloaded free of charge by anyone.

Provides auditory descriptions of each onscreen element using gestures, a keyboard, or a braille display.

Adds spoken, audible, and vibration feedback to your device.

Screen magnifier for Microsoft Windows that allows you to see and hear everything on the computer.
How does screen reader work?

• Screen readers start at the top of a document or website and read any text including alternative text for images, graphics or charts).

• Screen readers read a document from left-to-right and top-to-bottom.

• Screen readers navigate a document or website using the keyboard **without** a mouse. **Tab** key: jump from link to link, **Enter**: select a link, **arrow** keys: navigate a document or website.

• Reading order is important for users with visual challenges. The users can become confused if the document (content, tables, images or charts) is poorly organized or out of order.
Screen readers and physical or mobility limitation users navigate a document or website using the keyboard **without** a mouse. The word “Click” is not inclusive of people who can’t use the mouse. Use the word “Select” to write step-by-step instructions.

**“Click” or “Click on” Example**
- Go to YouTube video player
- Click on Settings gear icon
- Click on Subtitles/CC
- Click on Options to Customize
- Click on Caption Style

**Use “Select” Example (Recommend)**
- Go to YouTube video player
- Select Settings gear icon
- Select Subtitles/CC
- Select Options to Customize
- Select Caption Style
• Slide Titles are meaningful and unique
• Maximum 6 – 8 lines of text per slide
• Minimum font size 24 points or above
• Tables, Charts and Graphs on own slide
• Avoid Transitions and Animations
• Sans-Serif fonts are more suited to electronic formats (*Arial*, *Calibri*, *Verdana* or *Franklin Gothic Book*)
**Slide Layouts**

- Simple themes, pre-defined slide layout templates
- Slides with unique titles
- Default bulleted and numbered lists
- Avoid themes with drop shadows on design, colors or text
- Avoid text boxes (inaccessible)
Slide Designs – may *not* be accessible

The themes come with default background and foreground colors and fonts may be difficult for some viewers to see it. The Accessibility Checker in PowerPoint does not check for color contrast. Use simple and light background with dark text or dark background with white text is the best approach.
Microsoft – Accessible Template Showcase
(Check color contrast, etc.)

Microsoft Accessible Template Website
Microsoft Presentation 97 - 2003

If you encounter [Compatibility Mode] and unable to use PowerPoint Accessibility Checker, that’s because older version like Presentation 97-2003 don’t have Accessibility Checker features available.

- **For Mac**: Review tab, Check Accessibility

Go to **File** Tab, select **Save As**, **File Format**: Select **PowerPoint Presentation (.pptx)** Presentation 2016 or Office 365 has Accessibility Checker features. Run **Accessibility Checker** again.

All CSUN faculty, staff, and students can install the Microsoft Office 365 on up to five personal devices for FREE.

- Faculty and staff [https://www.csun.edu/it/download-office](https://www.csun.edu/it/download-office)
- Students: [https://www.csun.edu/it/students](https://www.csun.edu/it/students)
Built-in slide layouts (unique title)

- PowerPoint does not use headings instead using slide title. Every slide should have a unique title. Assistive technology users such as screen readers navigate by slide title.

- Using the default slide layouts is the first step making your presentation accessible. Screen readers may ignore items like text boxes that are added to the pages and will not appear in Outline View. It is important to use default slide layouts.

1. Go to “Home” tab
2. “New Slide”
3. “Office Theme”
Same Slide Titles

If the same slide title spreads in multiple slides, use this method

• Title, 1 of 3, Title, 2 of 3, Title, 3 of 3

• Title – Part I, Title – Part II

• Title – 1, Title – 2

Accessibility Checker will indicate “Duplicate Slide Title” and recommend to fix duplicate slide titles. “Every slide should have a unique title so those who cannot view the slide can still easily navigate to information.”
Slide Master Layouts aka Templates

• Master slides control the look of your entire presentation, including colors, fonts, backgrounds, effects, and just about everything else.

• If you need to add another box of text that is not in Slide Layout, use Slide Master to **Insert Placeholder** options.

• You can insert a shape or a logo on a slide master, and it will show up on **all** your slides automatically.

• Add Alt Text to describe an image or logo.

• Verify **Slide Reading Order.**

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Click to edit Master title style

- Click to edit Master text styles
  - Second level
    - Third level
      - Fourth level
        - Fifth level
Slide Reading Order, 1 of 2

The order of slides content determines how the content will be presented to screen reader users, and other users of assistive technology. Verify reading order in the Slide Master layouts.

Slide with Incorrect Read Order

1. Title
2. Content/Image
3. Content/Image
4. Content

Slide with Correct Read Order

1. Title
2. Content/Image
3. Content/Image
4. Content
Verify in the **Slide Master layouts**.

To check or fixing reading order of a slide, select **Home > Arrange > Selection Pane**.

Reading order is shown in reverse, **bottom to top**. Click and drag or use the arrow buttons to change reading order.

*When the screen reader reads this slide, it reads the objects in the reverse order listed in the Selection pane.*

**Important:** The **Title** should always be read first as heading title. Assistive technology users such as screen readers navigate by slide title.
Text boxes inaccessible

- Screen readers **may ignore** items like text in text boxes that are added to the pages.
- Text in text boxes **do not** show up in Outline View.
- Best approach is to use built-in slide layouts.
Outline View, 1 of 2

Use Outline View for a quick check of text accessibility and the read order in an entire slideshow.

View tab > Outline View
Outline View, 2 of 2

Outline provides text accessibility when someone needs an alternate format such as **braille or large print** of the presentation. When save the presentation as an Outline/Rich Text Format (RTF), the outline content will export to Word Document with accessible text structure. Using the built-in slide layouts will **save you time**.
Outline View tips

• Use Outline View for a quick check of text accessibility and the read order.

• To ensure that the Title and body text are identified correctly in each slide, choose the Outline view. In this Outline View the text and the order in which it will be read by a screen reader can be seen.

• Text can also be changed directly in the Outline view. Notice that tables, graphics and pictures **will not** show in Outline view.

• Any text not in pre-existing **Slide Layouts** (text placed in text boxes that are manually added to the slide) or in the ‘notes’ section **will not** appear in the Outline view.

• Screen readers **may ignore** items like text in text boxes that are added to the pages.
Visual Challenge

Children leaving school before completing their Primary Education

- In Sub-Saharan, 11.07 million children leave school before completing their primary education.
- In South and West Asia, that number reaches 13.54 million.

Normal vision

Low vision

Color blindness

Blind or deaf-blind

What’s the best way to make images accessible to everyone?

Universal Design Center

csun.edu/udc
Image Alternative or Alt Text

• The purpose of alt text is to allow low vision or blind users to understand the purpose of the image. Describe only how image relates to content. What is its purpose? Why the image there?

• Screen readers and other assistive technologies can’t convert images into words/texts.

• Captions are universal and accessible for everyone.

• “Image of…”, “photo of…” is not needed.

• Keep alt text short 8 to 120 characters or less.

• Alt text should be very brief, no more than a sentence or two.

• Best practices for accessible images

When screen readers encounter an image, they read out the word “image” or “graphic” and then read the alt text: “Three plants going through transformation with text quote Accessibility user-friendly document for CSUN student success.”
How to Describe Images?

A stair chase leading up to an entryway is painted yellow with bold black text that reads “museums are now.”

A hand reaches out of a computer screen giving the hand gesture for stop. The screen reads “access denied!”

On the left is the book cover for Haben: The Deafblind Woman Who Conquered Harvard Law, and on the right is the quote: “In the Tigrinya language of Eritrea and Ethiopia, Haben means ‘pride.’”

More examples of How to Describe Images

- Document Learning Tools: Describing images
- How to Describe Images (Art, Chemistry, Diagrams, Flow Charts, Formatting & Layout, Graphs, Maps, Mathematics, Page Layout, Tables, Text-only images)
- Periodic Table of the Elements
- UDC Best Practices for Describing Images

Michelle Obama claps and Barack waves.

Student holds a diploma hardcover up in the air during CSUN commencement. Caption text “and together, as Matadors, we will move mountains.”
Adding Alt Text for Office 365

Select the image, Picture Format tab, select "Alt Text"
Alt Text for Office 2016

About Sunflowers

Option 1: Mouse right-click Format Picture

Option 2: Select a picture, Picture Format tab, Format Pane, Alt Text
Full URL text https://www.csun.edu/universal-design-center
(raw URL may not make sense to screen reader users or others, so make the link text descriptive i.e. Universal Design Center)
When creating hyperlinks, make sure the text associated with the link is understandable out of context.

- Avoid this: You may find this tutorial here.
- Do this: You may find this tutorial on creating accessible Word document on our website.

**For Printing**
- If the document is likely to be printed, include the full URL. If the URL is long, consider creating a shorten URL (tiny.cc or bitly.com or other URL services)

You may find this tutorial on creating accessible Word document on our website (www.csun.edu/udc/word)

- Avoid using click here, more info, read more, continue, email me, and other vague language.
- Do not use different link text to refer to the same resource.
- Do not to use the same link text to refer to different resources.
- Be unique for unique destinations.
- Best practice is to bold or underline links.
- Do not use color links as the only method to convey important information.
- Tab order should read from the upper left to the lower right, and make sense to both sighted and visually impaired users.
Meaningful Link Text, 3 of 3

[Image of PowerPoint slide with a hyperlink being inserted. The link text is set to "Universal Design Center" and the address is set to "https://www.csun.edu/udc".]
Why Color Coding is Not Accessible?

Fruit Preferences

- Apple
- Orange
- Strawberry
- Watermelon

Legend:
- Like
- Neutral
- Dislike
View this presentation in black and white, and customize how the colors are translated into black and white.
Pattern Fill – Format Data Series, Fill & Line

• Select 1 of 3 bars
• Option 1: Mouse right-click to select Format Data Series
• Option 2: Format tab, select Format Selection
• Fill & Line icon
• Pattern Fill & Select Pattern type
• Repeat for each bar with a different pattern type
• Select 1 of 3 bars
• Option 1: Mouse right-click to select Add Data Labels, Add Data Labels
  • Right-click again to select Format Data Labels
  • On right pane, select Series Name
• Option 2: Design tab, select Add Chart Element, Data Labels
  • Under Data Labels, select More Data Label Options
  • On right pane, select Series Name
• Repeat for each bar
Accessible - Pattern Fill & Data Labels

Fruit Preferences

Apple: Like, 25; Neutral, 13; Dislike, 18
Orange: Like, 25; Neutral, 18; Dislike, 13
Strawberry: Like, 25; Neutral, 20; Dislike, 13
Watermelon: Neutral, 30; Like, 15; Dislike, 11

Charts & Accessibility by Penn State

Universal Design Center

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Inaccessible Line Chart

This is an inaccessible line chart based on the data in the table comparing percentage of Mac and Windows users in 1990 and 2003. In grayscale, these colors are virtually identical may not be recognized by colorblind users.

Accessible Line Chart

This chart replaces three solid lines with one solid line and two dotted lines, with labels for each. For line charts, changing the style of the graph lines and adding labels increases usability. [Charts & Accessibility by Penn State](http://csun.edu/udc).
Provide descriptions if using color to convey meaning

**Example 1**: Inaccessible color highlights in red

May 11-17, 2019

**Example 1**: Accessible with a description

May 11-17, 2019* (final exams)

**Example 2**: Inaccessible table

<table>
<thead>
<tr>
<th>Assignments (overdue in red)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Chapter 1</td>
<td></td>
</tr>
</tbody>
</table>

**Example 2**: Accessible table

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Overdue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Yes</td>
</tr>
<tr>
<td>Chapter 1</td>
<td>No</td>
</tr>
</tbody>
</table>

**Example 3**: Inaccessible color shape

Color identical may not be recognized by colorblind users

**Example 3**: Accessible color and number
People who have low vision or colorblind could encounter some difficulty distinguishing text color from a background color if the contrast is insufficient contrast ratio 1.5:1.

This example has a great color contrast ratio of 8.7:1. The contrast is sufficient for those who have color deficiencies.

- Download Colour Contrast Analyser onto your computer (PC/Mac) to ensure accessible contrast or use an online contrast checker from WebAIM.
- WCAG Level AA requires a contrast ratio of at least 4.5:1 for regular sized text (12 or 14 pt. font) and 3:1 for large text (18 pt. font).
- Coblis Color Blindness Simulator
Test Color Filters without Printing

To use color filters on Windows:
• Select Start > Settings > Ease of Access > Color filters.
• Switch on the toggle under Turn on color filters.

To use color filters on Mac:
• On your Mac, choose Apple menu > System Preferences, select Accessibility, select Display, select “Use grayscale”

Image courtesy of Accessible Syllabus

• Information and charts should never be conveyed through color alone.
• Color may not be recognized by colorblind users.
• Provide text descriptions for charts and graphics.
• Charts & Accessibility by Penn State
Complex Images/Graphics/Charts

PowerPoint does not have Insert Caption feature like in MS Word, use one of built-in slide layouts to provide a longer description.

Some images, such as graphs, charts or informative illustrations require fairly lengthy explanations to make them accessible.

Provide a brief alt text description of the image and a longer description within the slide. This may be helpful for others as well since some people have difficulty understanding charts and graphs. Credit to Explore Access

Example of Option 1

Chart 1. Website Accessibility Assessment of All Organizational Charts. Findings from the assessment indicate the following: 5% of organizational websites had fewer than 2 errors on the home page; 20% had 3 to 5 errors; 45% had 6 to 10 errors; and 30% had more than 10 errors on the home page.
Art or SmartArt Shapes

Often shapes are used behind text to create emphasis. Most screen readers will not identify shapes, and you will often split up your text in awkward ways to make it fit within the shape.

The example below exemplifies what not to do (notice how the reading order is impacted when a shape is moved to the background in order for the text to show on top)

What not to do

Shapes rain on My parade.
Art or SmartArt Shapes Workaround

Step 1: Create stand-alone PowerPoint file for all Art Shapes (editable).

Step 2: Use SnagIt to capture Art Shapes (step 1) then copy an image into final slides (step 3)

Step 3: Create another PowerPoint file for final slides.

Step 4: Add Alt Text for an image (step 3)
Use PowerPoint’s built-in functionality to create Tables

- Tables are read from left to right, top to bottom.
- Simple Data Tables only.
- Provide Title (i.e. Caption) and Summary before the Table.
- Specify Header Row

Not Accessible

- Do not create table using the Draw Table Tool.
- Never use for layout.
- Avoid merged, split, or blank cells.
- The complex a table (merging cells, nesting multiple headings under one, adding blank lines, etc.) the worse it will be for accessibility.
- Sample of Simple Tables vs. Complex Tables by Penn State.
Table – Insert Table

Click to add title

- Click to add text

1. Insert table

2. Insert Table dialog box:
   - Number of columns: 4
   - Number of rows: 5

[Diagram showing the process of inserting a table with options for columns and rows]
Default Color Scheme NOT Accessible
Select Table, Design to Expand Table Styles
Select Accessible Color Scheme
Select Table – Design, Header Row

- Header Row means column headers
- First Column means row headers

### Header Row (Column Headers)

<table>
<thead>
<tr>
<th>Fruit</th>
<th>2018</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>$1,900</td>
<td>$2,400</td>
<td>$1,500</td>
</tr>
<tr>
<td>Strawberry</td>
<td>$800</td>
<td>$600</td>
<td>$1,000</td>
</tr>
<tr>
<td>Avocado</td>
<td>$2,000</td>
<td>$1,500</td>
<td>$3,000</td>
</tr>
</tbody>
</table>

### Header Row and First Column

<table>
<thead>
<tr>
<th>Fruit</th>
<th>2018</th>
<th>2017</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>$1,900</td>
<td>$2,400</td>
<td>$1,500</td>
</tr>
<tr>
<td>Strawberry</td>
<td>$800</td>
<td>$600</td>
<td>$1,000</td>
</tr>
<tr>
<td>Avocado</td>
<td>$2,000</td>
<td>$1,500</td>
<td>$3,000</td>
</tr>
</tbody>
</table>
Table Color

Avoid using color as the only means to convey information. For example, in the table below, the complete and incomplete items may appear the same to someone who is color blind:

<table>
<thead>
<tr>
<th>Project</th>
<th>Due Date</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>March 15, 2020</td>
<td>X</td>
</tr>
<tr>
<td>Project 2</td>
<td>April 15, 2020</td>
<td>X</td>
</tr>
<tr>
<td>Project 3</td>
<td>May 15, 2020</td>
<td>X</td>
</tr>
</tbody>
</table>

A better option would be to provide another way of conveying information not just color alone:

<table>
<thead>
<tr>
<th>Project</th>
<th>Due Date</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>March 15, 2020</td>
<td>N or No</td>
</tr>
<tr>
<td>Project 2</td>
<td>April 15, 2020</td>
<td>Y or Yes</td>
</tr>
<tr>
<td>Project 3</td>
<td>May 15, 2020</td>
<td>Y or Yes</td>
</tr>
</tbody>
</table>
Videos embedded in PowerPoint are currently inaccessible; consider adding a link to the video on YouTube™/Vimeo

[Video]

Apple – Accessibility - Sady
Animations and Transitions

Avoid animation and automatic slide transitions:

- Can be distracting
- Can cause screen readers to re-read slides
- Can read parts of the slide out of order, and/or
- May not give users enough time to read the slide content

It's recommended that any transitions you add to your slides are done using the "on click" option, versus timing the animations and transitions. This allows the user/viewer to control the speed at which they view the content and progress through the slides.
Microsoft Office Accessibility Checker

The accessibility checker will identify certain accessibility issues:

- Duplicate slide titles
- Headings that are not in logical order
- Images with no alt text
- Tables have the header box checked
- Tables that have merged cells or with empty cells
Check for Issues, Check Accessibility
Always use PowerPoint’s built-in Accessibility Checker
Repair Errors, Warnings and Tips
Accessibility Tips

- Use simple language.
- Ensure font size sufficient.
- Provide sufficient contrast between the text and the background.
- Do not use color as the only way to convey meaning or communicating information.
- Avoid automatic slide transitions
- Use simple slide transitions when possible.

- Do not put accessibility information like alternative text in the Notes Pane.
- Ensure video files have captions and audio descriptions.
- Ensure audio files have transcripts.
- Player controls for videos embedded in PowerPoint are currently inaccessible; consider adding a link to the video on YouTube™/Vimeo.

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File – Properties - Title

PowerPoint 2016 Essentials - Mac Properties

- Title: PowerPoint 2016 Essentials
- Subject:
- Author: Nguyen, Van Thi
- Company:
- Category:
- Keywords:
- Comments:
- Hyperlink base:
- Save preview picture with this document

Accessibility

Universal Design Center

csun.edu/udc
Converting to PDF

Unfortunately, Mac PowerPoint Save As PDF doesn’t import PDF tags structure. There are alternative ways to tag it.

**Option 1:** If you have Adobe Acrobat Pro, you can use **Accessibility** tool, select **Autotag Document or Action Wizard** tool. Tags may be inaccurate so need to verify it. Conduct an accessibility “Full Check” to fix accessibility errors.

**Option 2:** Upload your PowerPoint in Canvas Ally, select dark gray arrow down, select **Alternative Formats**, and select **Tagged PDF** to download it. Use Adobe Acrobat Pro to add PDF title and language. Go to **File, Properties:**

- **Description** tab to enter Title
- **Advanced** tab, Reading Options to select Language

Tags may be inaccurate so need to verify it. Conduct an accessibility “Full Check” to fix accessibility errors.

Check PDF Accessibility page for more information [www.csun.edu/udc/pdf](http://www.csun.edu/udc/pdf)
Never choose a "Print" to PDF option in Office, or in any other program. A screen reader user may still be able to access the text of a PDF created in this way, but heading structure, alternative text, a logical reading order, and any other tag structure will be lost.

Use either Save As PDF or Export to PDF.
How can we help you make a **difference**?

**Universal Design Center Offers**
- Online, self-paced training
- In-person training each semester
- Consultations
- Tools and Services

*Universal Design means design for everyone*