# Excel Accessibility Checklist

## Step 1: Run the Accessibility Checker:

While no automated accessibility checker fully ensures compliance with Title II regulations, the built-in accessibility checker in Excel helps reduce the number of issues you will need to fix manually.

* Open the document in the Desktop version of Excel, **not** in the web version. Some of the accessibility features do not work in the web version.
	+ [How to open the Desktop version from the web version](https://support.microsoft.com/en-us/office/open-a-onedrive-or-sharepoint-file-in-the-desktop-app-instead-of-the-browser-761c66d2-7bc3-490e-a536-b3f71f41636b)
* [Use the Microsoft Office Accessibility Checker](https://support.microsoft.com/en-us/topic/improve-accessibility-with-the-accessibility-checker-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f)
* If you are creating a new spreadsheet, it can be helpful to keep the accessibility checker open to notice and fix common accessibility issues as you work.

## Step 2: Implement Each Title II Standard

The categories below are the general features that need to be implemented in Excel. Click on each category to see the specific items that need to be completed and instructions for how to complete that item. For each item, the relevant [WCAG 2.1 AA standard](https://www.w3.org/TR/WCAG21/) is indicated. Items with no standard are best practices that are not specified in the WCAG standards. This [WCAG in Plain English Guide](https://aaardvarkaccessibility.com/wcag-plain-english/) explains each standard in more depth. To meet these requirements, the answer to all the following questions should be **"yes”**.

### Links

1. Are all URLs given as hyperlinks embedded in meaningful text that clearly indicates the link’s purpose or destination? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/); [2.4.4](https://aaardvarkaccessibility.com/wcag-plain-english/2-4-4-link-purpose-in-context/)
	* [How to create links](https://www.excel-easy.com/examples/hyperlinks.html)
	* The full URL should not be given. Avoid links that include verbs or verb phrases like “click here” or “go here for more information”. Email addresses can be written out (i.e., iteach2@unl.edu).
2. Is underlining used only for hyperlinks and not for other textual emphasis?
	* To emphasize text, bold the text.

### Images

1. Do all images either have alternative text giving an accurate and concise description **or** have a ‘decorative image’ designation if the image is non-informative? [1.1.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-1-1-non-text-content/)
	* If the image has alt text of something non-descriptive like the file name, the accessibility checker will not flag the image. This means you need to manually examine the alt text for all images, not just those flagged by the checker.
	* [How to add alt text](https://support.microsoft.com/en-us/office/add-alternative-text-to-a-shape-picture-chart-smartart-graphic-or-other-object-44989b2a-903c-4d9a-b742-6a75b451c669#PickTab=Windows)
	* [How to write good alt text](https://canvas.unl.edu/courses/120076/pages/stem-alt-text)
	* [How to tell if an image should be marked as decorative](https://sc.edu/about/offices_and_divisions/digital-accessibility/toolbox/best_practices/alternative_text/decorative-images)
2. Are equivalent alternatives to complex images like graphs and infographics provided? [1.1.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-1-1-non-text-content/)
	* The accessibility checker will only tell you if alt text is missing entirely, it will not tell you whether the alt text is a sufficient description. Complex images should have a short description in alt text **and**a longer description, which can in a caption near the image or in a linked separate document.
	* [How to write good long descriptions](https://canvas.unl.edu/courses/120076/pages/stem-long-descriptions)
3. Do charts contain axis labels, legends, titles, and alt text? [1.1.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-1-1-non-text-content/)
	* [Add axis labels](https://support.microsoft.com/en-us/office/change-axis-labels-in-a-chart-in-office-1efa2bd8-2b46-4db1-b15e-c8fd12e39a8c)
	* [Add a legend](https://support.microsoft.com/en-us/office/add-a-legend-to-a-chart-eccd4b70-30ec-429d-8600-6305e08862c7)
	* [Add or remove a title](https://support.microsoft.com/en-us/topic/add-or-remove-titles-in-a-chart-4cf3c009-1482-4908-922a-997c32ea8250)
	* [Add alt text](https://support.microsoft.com/en-us/topic/add-alternative-text-to-a-shape-picture-chart-smartart-graphic-or-other-object-44989b2a-903c-4d9a-b742-6a75b451c669)
		+ Alt text should describe the type of chart and what it demonstrates. For complex charts, a [long description](https://canvas.unl.edu/courses/120076/pages/stem-long-descriptions) might also be needed.
	* Consider changing the colors of the chart elements so they have a high color contrast. Online color contrast checkers, such as [WebAIM's contrast checker](https://webaim.org/resources/contrastchecker/), can help. You should also add a secondary element such as patterning so the elements can be distinguished without relying on color.
	* When elements of the chart are touching (such as bars or pieces of a pie chart), a line in a different color between the elements helps visually distinguish between them.
4. Is text presented as text rather than an image including text? The only exception to this is when the text is part of a logo or other branding. [1.4.5](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-5-images-of-text/)
	* To fix this issue, the image should be replaced by text rather than adding alt text to the image.
	* If the image is a logo, give that information in the alt text.

### Structure

Excel has different structural features than many other programs, so the items in this section will be different than the lists for other programs.

1. Does each Excel file have a unique title that tells the reader a general description of the content of the document? [2.4.2](https://aaardvarkaccessibility.com/wcag-plain-english/2-4-2-page-titled/)
	* The title can be given in cell A1 (See #3 in other Excel features section below) if there is only one worksheet or [set in the properties of the workbook](https://webaim.org/techniques/excel/#title) if there are more than one worksheets. The file name is not considered a title.
2. Is the majority of the text left-aligned if the text is in English? For other languages the text should be aligned based on the norms for that language. [1.4.8](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-8-visual-presentation/)
	* Is center-aligned text used only for short pieces of text? [1.4.8](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-8-visual-presentation/)
	* Does the document avoid using full justification of text? [1.4.8](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-8-visual-presentation/)
	* To change the alignment of text, click on **Home** in the top tool bar and select the alignment you would like in the Alignment section.

### Tables

1. Are tables formatted as tables rather than pictures? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/); [1.4.5](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-5-images-of-text/)
	* If a table is a picture, [recreate the table](https://community.canvaslms.com/t5/Canvas-Basics-Guide/How-do-I-insert-a-table-using-the-Rich-Content-Editor/ta-p/618220) in Excel.
2. Do all tables have a title? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
	* You can add a title in the cell above the table or in the upper left hand cell of the table.
3. Do all tables have headers? Are all the column headings unique? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/); [1.3.2](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-2-meaningful-sequence/)
	* [How to create table headers](https://support.microsoft.com/en-us/office/turn-excel-table-headers-on-or-off-c91d1742-312c-4480-820f-cf4b534c8b3b)
4. Do tables avoid using merged cells? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
	* [How to split cells that have been merged](https://support.microsoft.com/en-us/office/merge-or-split-cells-in-a-table-8b458deb-0fc5-4c8d-8d94-2d4da98193f8)
5. Are tables only used to organize data with a logical relationship rather than being used for layout structure or organization? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
	* Format tables so that both the first (header) row and the first column (if applicable) contain meaningful labels, and each cell’s content depends on the intersection of those labels. If the table is just used for layout or organization, then table formatting should not be used. [See examples of the differences between these two types of tables.](https://canvas.unl.edu/courses/120076/pages/examples-of-data-vs-formatting-tables)
6. Do tables avoid having any empty data cells? [1.3.2](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-2-meaningful-sequence/)
	* In empty cells, put a dash or write NA, no data, not applicable, or no value. If you do not want sighted users to see it you can change the text in the cell to the same color as the background.

### Supplements

1. Are the font type and size adjustable (ie, is the file editable and not ‘read-only’)?  [1.4.4](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-4-resize-text/); [1.4.8](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-8-visual-presentation/); [1.4.12](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-12-text-spacing/)
2. Is the correct language set for the document? [3.1.1](https://aaardvarkaccessibility.com/wcag-plain-english/3-1-1-language-of-page/)
	* Excel may default to English or detect the language used. If the correct language is consistently being used, you do not need to check this each time you create a document.
	* [How to set the language](https://support.microsoft.com/en-us/office/add-an-editing-or-authoring-language-or-set-language-preferences-in-office-663d9d94-ca99-4a0d-973e-7c4a6b8a827d)
3. Is there sufficient color contrast? [1.4.3](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-3-contrast-minimum/); [1.4.11](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-11-non-text-contrast/)
	* If you plan to use colors within your content, be sure there is sufficient contrast between text colors and background colors, as well as within visual elements such as images and graphs.
		+ Text must have a contrast ratio of at least 4.5 to 1. Large text can be a 3 to 1 ratio if it’s over 24px, or bold and over 19px.
		+ Usable components like form fields and buttons, and graphics like pie charts and line graphs must have a ratio of 3 to 1.
	* The accessibility checker does not necessarily catch all color contrast issues. Online color contrast checkers, such as [WebAIM's contrast checker,](https://webaim.org/resources/contrastchecker) can help you determine whether there is sufficient contrast.
	* In Windows operating systems, you can further check the accessibility of your colors by enabling the grayscale color filter by clicking on **Settings,**then**Ease of Access,**then**Color filters**(left sidebar). In Macintosh operating systems, click on **System Preferences,** then **Accessibility,** then **Display**(left sidebar), then**Color Filters**(a tab), then**Enable Color Filters**(checkbox). Visually check each slide that the information is still discernible on each slide when color is not present.
4. Is any information or navigation (such as grouping, importance, directionality, etc.) conveyed by visual cues (i.e., color, size, font, position, grouping, shape) also communicated in another non-visual way? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/); [1.4.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-4-1-use-of-color/)
	* If text needs to be emphasized, it is bolded rather than relying solely on visual formatting such as color or font.
	* When color is used to convey information, is there another non-visual method to convey that information (such as text, which can be ready by a screen reader)?
	* If spatial relationships between pictures or shapes communicate information, is this information included in another non-visual form (such as text description, which can be ready by a screen reader).
	Links to an external sit
5. Is any information (such as importance, when to perform an action, if an answer is correct, etc.) conveyed by audio cues (i.e., sounds effects, music) also communicated in another non-audio way (such as text)? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
6. Is nothing referred to just by its visual or audio characteristics, such as color, size, position, shape, or sound? [1.3.3](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-3-sensory-characteristics/)
	* For example, rather than saying "Write the amount in the yellow cell" you could say "Write the amount in the yellow cell at B2"
7. When sharing the file, was it saved as an Excel file rather than being converted to a PDF?
	* Excel files are easier to make accessible than PDFs and several accessibility features are lost when Excel files are converted to PDFs
8. Is the use of all capital letters used only for acronyms and not other textual emphasis?
	* If you want to emphasize text, bold the text.
9. Are sans serif fonts such as Courier, Arial, Verdana, and Calibri used?
10. Are equations and formulas presented in an accessible format? [1.1.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-1-1-non-text-content/)
	* See the resource on [Making Math Equations Accessible](https://canvas.unl.edu/courses/120076/pages/stem-math-equations)

### Other Excel Accessibility Features

1. Do all worksheets have unique and descriptive names? [2.4.2](https://aaardvarkaccessibility.com/wcag-plain-english/2-4-2-page-titled/)
	* [Rename worksheets](https://support.microsoft.com/en-us/office/rename-a-worksheet-3f1f7148-ee83-404d-8ef0-9ff99fbad1f9) so people know what content they will find
2. Do all worksheets have content? [1.3.2](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-2-meaningful-sequence/)
	* [Delete any empty worksheets](https://support.microsoft.com/en-us/office/insert-or-delete-a-worksheet-19d3d21e-a3b3-4e13-a422-d1f43f1faaf2)
3. Does cell A1 contain text that gives either the title of the worksheet or information about the structure and location of the data? [2.4.2](https://aaardvarkaccessibility.com/wcag-plain-english/2-4-2-page-titled/)
	* Assistive technologies start by reading cell A1 so the information there can help people understand what information is available in the spreadsheet.
4. Are there meaningful row and column labels for information in the spreadsheet? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
5. Are all data cells unmerged? [1.3.1](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-1-info-and-relationships/)
	* [How to unmerge cells](https://support.microsoft.com/en-us/office/merge-and-unmerge-cells-5cbd15d5-9375-4540-907f-c673a93fcedf#:~:text=To%20unmerge%20cells%20immediately%20after,cell%20when%20the%20cells%20split).
	* Excel's accessibility checker will notice this in the data area but not in headings.
6. Are alignment tools, such as increasing the size of cells, used to create space rather than blank rows or columns? [1.3.2](https://aaardvarkaccessibility.com/wcag-plain-english/1-3-2-meaningful-sequence/)
	* Remove blank cells and [change the column width or row height](https://support.microsoft.com/en-us/office/change-the-column-width-and-row-height-72f5e3cc-994d-43e8-ae58-9774a0905f46#:~:text=fit%20the%20contents-,Select%20the%20row%20or%20rows%20that%20you%20want%20to%20change,one%20of%20the%20row%20headings.) as needed.
7. Is the end of the worksheet marked with "end of worksheet" in column A after the last row of data?
	* This tells learners using assistive technologies that there are no remaining items on that sheet.