Accessible Slides in LaTeX
https://github.com/rhstanton/accessible_LaTeX

Version 1.0

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Introduction

- On January 8, 2026, we were notified by campus that, beginning in April 2026,

  > "The updated requirements of the ADA require that digital course materials provided to students, even materials inside password-protected course sites like bCourses, will need to comply with accessibility standards (Web Content Accessibility Guidelines (WCAG) 2.1 Level AA)."

- Many of us use Beamer to create teaching slides.

- But Beamer is not **and never will be** compatible with these requirements.

- Fortunately, the LaTeX Project team has created `ltx-talk`, a purpose-built accessible presentation class that:

  1. Generates accessible output meeting WCAG 2.1 Level AA standards,
  2. Requires little modification to existing Beamer source (uses same `frame` syntax), and
  3. Requires *no* manual processing of the resulting PDF file.

  - Part of the LaTeX Tagging Project
  - Included in TeX Live 2023+ (no separate installation needed)
  - See latest detailed instructions

Using this template

- You can use this presentation as a template for modifying your own work.
    - Contains math, text, graphics, and tables.
    - Scores a perfect 100% from the bCourses accessibility checker, Ally.
    - It's easy! Most of the work is just editing the preamble.

- The template is available at:
  https://github.com/rhstanton/accessible_LaTeX

The basics

- Slides are put inside a `frame` environment, just like in Beamer.
- So **existing source files don't need a lot of editing.**
- Here's some gratuitous *math* for the accessibility checker.

```
\begin{frame}{The basics}
\begin{itemize}
\item Slides are put inside a \texttt{frame} environment, just like in Beamer.
\item So \textbf{\color{blue}existing source files don't need a lot of editing.}
\item Here's some gratuitous $\mathit{math}$ for the accessibility checker.
\end{itemize}
\end{frame}
```

- Note: I set the fonts in this file so that numbers, percent signs, and dollar signs look the same in both math and text mode (my pet Beamer peeve…)
    - Text: $1234567890%.
    - Math: $1234567890%.

Important workflow change: Use LuaLaTeX

- You'll need to change your LaTeX compiler from pdfLaTeX to LuaLaTeX.
- Why switch to LuaLaTeX?
  1. **Automatic MathML:** LuaLaTeX automatically generates MathML (Mathematical Markup Language) for equations, making math accessible to screen readers without extra work.
  2. **Easier workflow:** While pdfLaTeX has partial support, it requires manually providing MathML files for each equation—tedious and error-prone.
  3. **Modern Fonts:** LuaLaTeX handles OpenType fonts (like Lato) natively, essential for proper Unicode support.
  4. **Full UTF-8:** Complete support for international characters and screen readers.
- TeX Version Requirements:
  - Minimum: TeX Live 2023 (late 2023, with `tlmgr update --all`)
  - Recommended: TeX Live 2024 or later
  - Will NOT work: TeX Live 2022 or earlier
- How to switch:
  - Command line: `lualatex myfile.tex`
  - Most LaTeX editors: Select "LuaLaTeX" from the compiler menu
  - Overleaf: Set compiler to "LuaLaTeX" in the menu

Figures

- Including figures is the same as in Beamer (e.g., using \includegraphics), but you need to provide a text description.

```
\includegraphics[height=.4\textheight,alt={A capybara}]{capybara.jpg}
```

Tables

- Including tables is the same as in Beamer (e.g., using the `tabular` environment), but you need to specify the title rows. E.g,

```
\tagpdfsetup{table/header-rows={1,2,3}}
\begin{tabular}{ccccrcccr}
...
\end{tabular}
```

Payment date	Caplet expiry date	DF_{pay}	Forward rate	Days to expiry	Days in accrual period	T_{expiry}	Δ	Caplet
2004/12/01	—	0.99550	0.01790	0	91	0.00000	0.25278	—
2005/03/01	2004/11/29	0.99008	0.02188	89	90	0.24384	0.25000	1,178.77
2005/06/01	2005/02/25	0.98401	0.02413	177	92	0.48493	0.25556	4,844.73
2005/09/01	2005/05/27	0.97733	0.02675	268	92	0.73425	0.25556	10,016.71

Common Pitfalls to Avoid

- Forgetting alt text for images
  - Every `\includegraphics` needs an `alt={...}` parameter
  - Even decorative images need alt text (use `alt={decorative}`)
- Not specifying table header rows
  - Add `\tagpdfsetup{table/header-rows={1}}` before each data table
  - Forget this and screen readers can't navigate your tables properly
- Using the wrong compiler
  - Make sure your editor is set to LuaLaTeX, not pdfLaTeX
  - Check this *every time* you open the project
- Old TeX distribution
  - TeX Live 2022 or earlier won't work
  - Run `tlmgr update --all` if using TeX Live 2023

Conclusions

- Migrating Beamer-based materials to make them accessible is quite easy.

- Next steps:
  1. Download this template from https://github.com/rhstanton/accessible_LaTeX
  2. Copy the preamble to your existing Beamer files
  3. Change `\documentclass{beamer}` to
     `\documentclass[frame-title-arg]{ltx-talk}`
  4. Add `alt` text to images and `table/header-rows` to tables
  5. Set your compiler to LuaLaTeX
  6. Compile and test!

- Questions or suggestions? richard.stanton@berkeley.edu