PDF accessibility

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Making a LaTeX document accessible:

- Get the latest versions of everything. Install the 2025 version, and update your packages and executables (maybe see `https://tex.stackexchange.com/questions/55437/` for the updating part).

- As the first command (before `\documentclass`), use

  ```
  \DocumentMetadata{lang=en,pdfstandard=ua-2,tagging=on,
    tagging-setup={math/setup=mathml-SE,math/alt/use}}
  ```

  If this won't be on Blackboard, remove the `,math/alt/use`. A useful key is `check-tagging-status`, which will report the tagging status of your class and packages. See `texdoc documentmetadata-support-code` for more information.

- Give your document a `\title`

- Any `\includegraphics`, `\tikz`, or `{tikzpicture}` or `{picture}` environments need `alt={...}` in the options (if the image is truly decorative, you can use the option `artifact` instead of `alt`; a different option is `actualtext={...}` if your image is really text in disguise).

  "Best practices" recommend that alt text has at most two sentences or 120 characters, and to keep in mind that alt text is generally invisible to most users (also don't start with "image", since screen readers often provide the word "image" on their own). If you need significantly more than that limit, you're supposed to use the alt text to point to the longer description.

- If you have a tabular, see `texdoc latex-lab-table` for additional commands you'll need. See also `https://latex3.github.io/tagging-project/documentation/prototype-usage-instructions.html`. Be forewarned that Ally has improperly complained about my `tagging=presentation`.

- LuaLaTeX works better than pdfLaTeX; XeLaTeX doesn't really work. The command `lualatex-dev` is the even more up to date version, which might help.

`\DocumentMetadata` greatly slows down the compilation process with `pgfplots` by a factor of 7 or so. You can try changing the first command to use `tagging=off`.

General class and package status is available at `https://latex3.github.io/tagging-project/tagging-status/` (this is what gets reported by the `check-tagging-status` key), see also `https://latex3.github.io/tagging-project/documentation/prototype-usage-instructions.html`.

Important package/class substitutions:

- `enumitem` and `enumerate` need to change to `enumext` (but the default versions now accept optional arguments so you may no longer need a package).

- `marginnote`, `marginfit`, and `marginfix` need to become `marginalia` or `\marginpar`.

- `beamer` needs to change to `ltx-talk`; documentation at `texdoc ltx-talk`.

UND is using Ally for Blackboard and Siteimprove (`https://www.siteimprove.com/platform/`) for the rest of the `UND.edu` website. These don't appear too difficult to pass. If you want to do better, you can use the much stricter VeraPDF (`https://verapdf.org/software/`).

Other resources:

PAC: `https://pac.pdf-accessibility.org/en` is an alternative to VeraPDF. It cannot validate UA-2/2.0 (so you'll need to remove the `math/setup=mathml-SE` and keep the `math/alt/use`). It also needs a low level work around for tables, and still complains about irregular tables (those using `\multicolumn` or `\multirow`). It's possible to work around this (see `https://github.com/latex3/tagging-project/discussions/930`) and a bug in pgfplots (see `https://github.com/pgf-tikz/pgfplots/issues/507`)

PDFix: `https://pdfix.net/` is much stricter than Ally. It mostly uses VeraPDF behind the scenes.

L^AT_EXML: `https://math.nist.gov/~BMiller/LaTeXML/` converts T_EX to html. This is what ArXiv uses to create internet versions. The result is more accessible, but the process is more difficult.

PreTeXt: `https://pretextbook.org/` converts its own xml syntax to html. You need to learn a new language.

Pandoc: `https://pandoc.org/` converts to and from various formats.

General information: `https://www.accessiblemath.info/accessible_math_documentation_page.html`

This document: `https://sites.und.edu/timothy.prescott/accessible`

Before and after example: `https://www.youtube.com/watch?v=Eu_qM53tInw&t=5900s` is Frank Mittelbach's talk from the June '25 T_EX conference.

If you have any questions, please let me know.