Quick and Easy Minimal Introduction to Accessible Documents

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Key Points

Latex to tagged PDF:

- Use LuaLatex (update your TexLive to 2025)
- Add alt text to Figures
- Or simply use Overleaf

Latex to HTML:

- LatexML
- MathJax

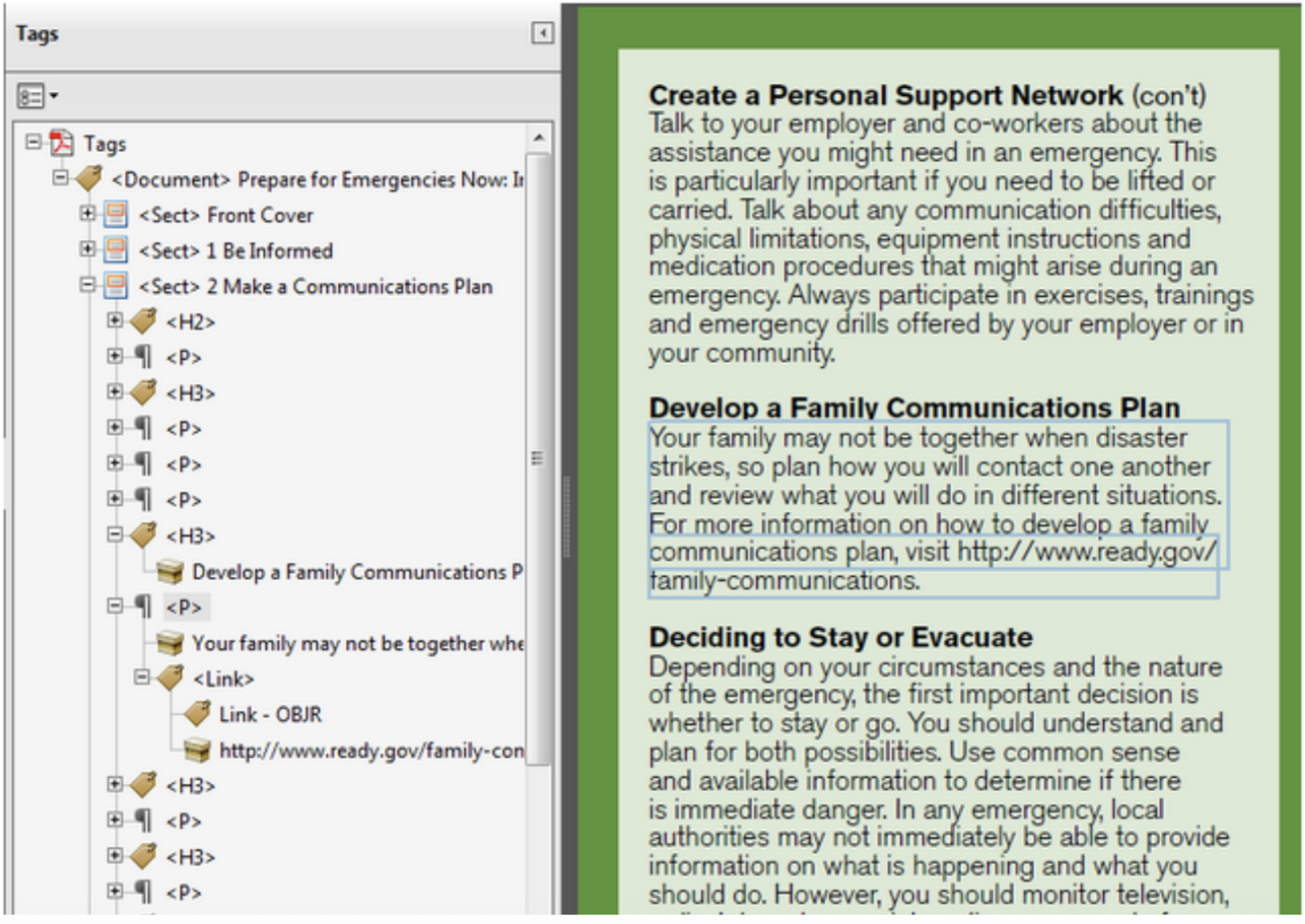
New or Other Platforms:

- PreTeXt
- Word, PowerPoint, Excel ... so they claimed

Teaching Pit Crew Website (TPC):

`https://www.math.purdue.edu/~yipn/TPC`

What is a tagged PDF



Latex to tagged PDF

- Use LuaLatex (update your TexLive to 2025)
- Use DocumentMetaData and unicode-math:

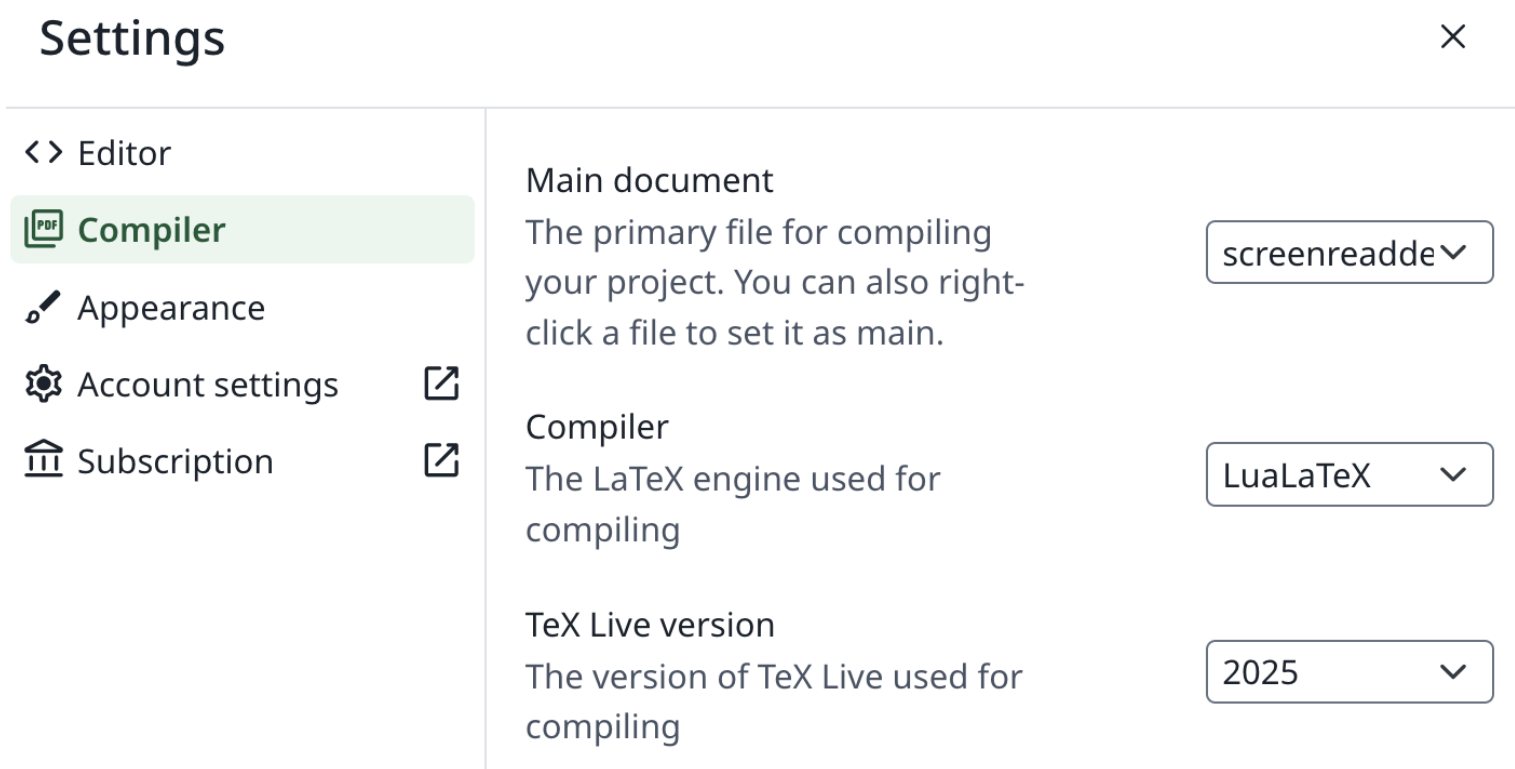
```
\DocumentMetadata{
        lang=en,
        pdfversion = 2.0,
        pdfstandard = ua-2, %or a-4
        tagging=on,
        tagging-setup={math/setup=mathml-SE}
}
\documentclass[12pt]{article}
%\documentstyle[portland, epsfig, 12pt]{article}
%\pagestyle{empty}
%\pagestyle{headings}
\usepackage{amsmath,amsfonts,amssymb}
\usepackage{epsfig}
\usepackage{showkeys}
\usepackage{unicode-math}
```

Latex to tagged PDF

- Add alt text to Figures

```
1 \includegraphics[height=4cm,alt={Portrait of Shakespeare}]{william-shakespeare.jpg}
2 \includegraphics[height=4cm,artifact]{crinklepaper}\makebox[0pt][r]{Some text }
3 \includegraphics[height=\baselineskip,actualtext=A]{example-image-a.jpg}
```

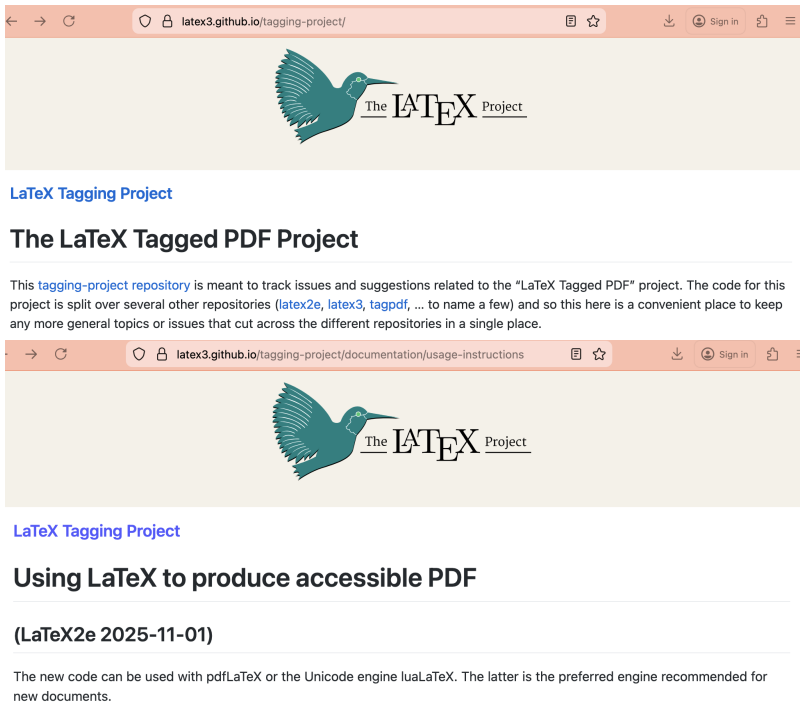
- You can also use Overleaf which includes all the most updated packages. In File/Settings:



Latex to tagged PDF

The following recources have many **actual examples** and comments (all accessible from TPC):

- Contributions by Mike Montoro
- Webpage of Tim Prescott: `https://sites.und.edu/timothy.prescott/accessible/`
- Latex Tagging Project



Latex to HTML

- Use LatexML (see contributions by Arshak Petrosyan in TPC):

Using LaTeXML

Basic Command-Line Workflow

If you are comfortable with the command line, the workflow typically involves two steps:

```
latexml --dest=yourfile.xml yourfile.tex
latexmlpost --dest=yourfile.html yourfile.xml
```

Here is an example.

Single-Step Conversion

```
latexmlc --dest=yourfile.html yourfile.tex
```

Latex to HTML

- Use MathJax:

MathJax v4: TeX input, HTML output test

When $a \neq 0$, there are two solutions to $ax^2 + bx + c = 0$ and they are

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

The Lorenz Equations

$$\begin{aligned} \dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy \end{aligned}$$

The Cauchy-Schwarz Inequality

$$\left(\sum_{k=1}^{n} a_k b_k \right)^2 \leq \left(\sum_{k=1}^{n} a_k^2 \right) \left(\sum_{k=1}^{n} b_k^2 \right)$$

Latex to HTML

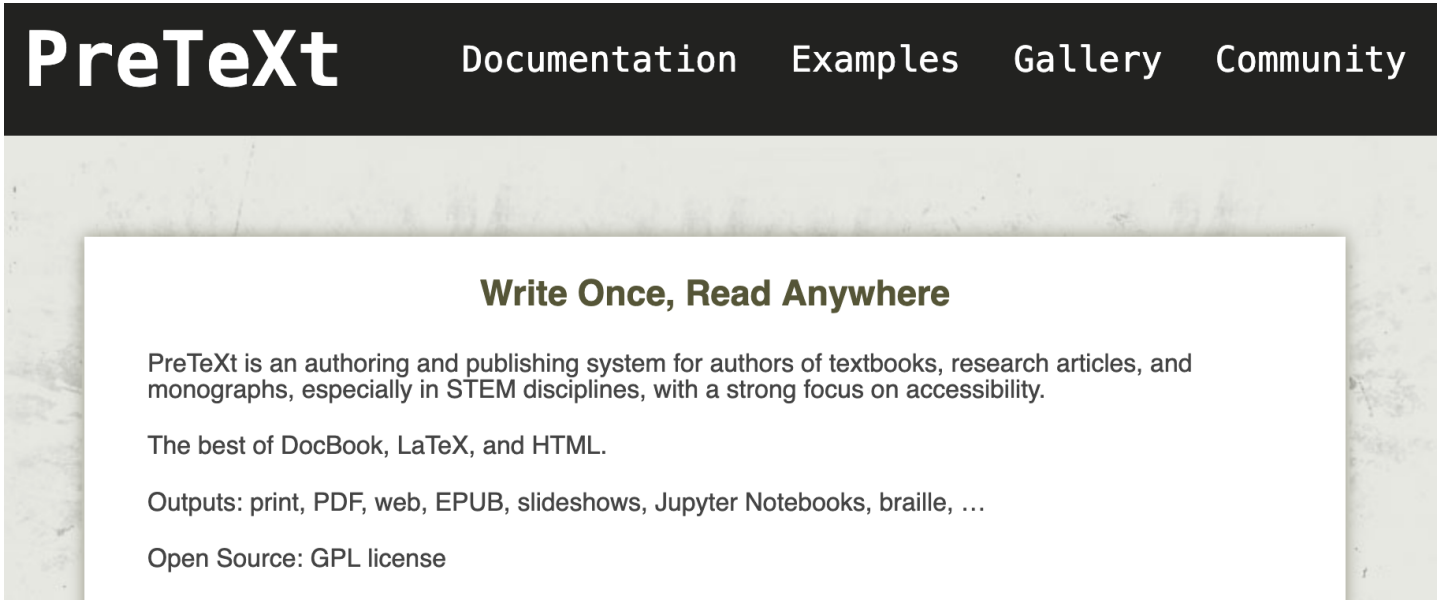
- Use MathJax:

```
<head>
  <script>
  MathJax = {
    tex: {inlineMath: {'[+]': [['$', '$']]}}
  };
  </script>
  <script defer src="https://cdn.jsdelivr.net/npm/mathjax@4/tex-chtml.js"></script>
</head>
```

```
<body>

<p>
  When $a \ne 0$, there are two solutions to \(ax^2 + bx + c = 0\) and they are
  $$x = {-b \pm \sqrt{b^2-4ac} \over 2a}.$$
</p>

<h2>The Lorenz Equations</h2>

<p>
  \begin{align}
    \dot{x} & = \sigma(y-x) \\
    \dot{y} & = \rho x - y - xz \\
    \dot{z} & = -\beta z + xy
  \end{align}
</p>
```

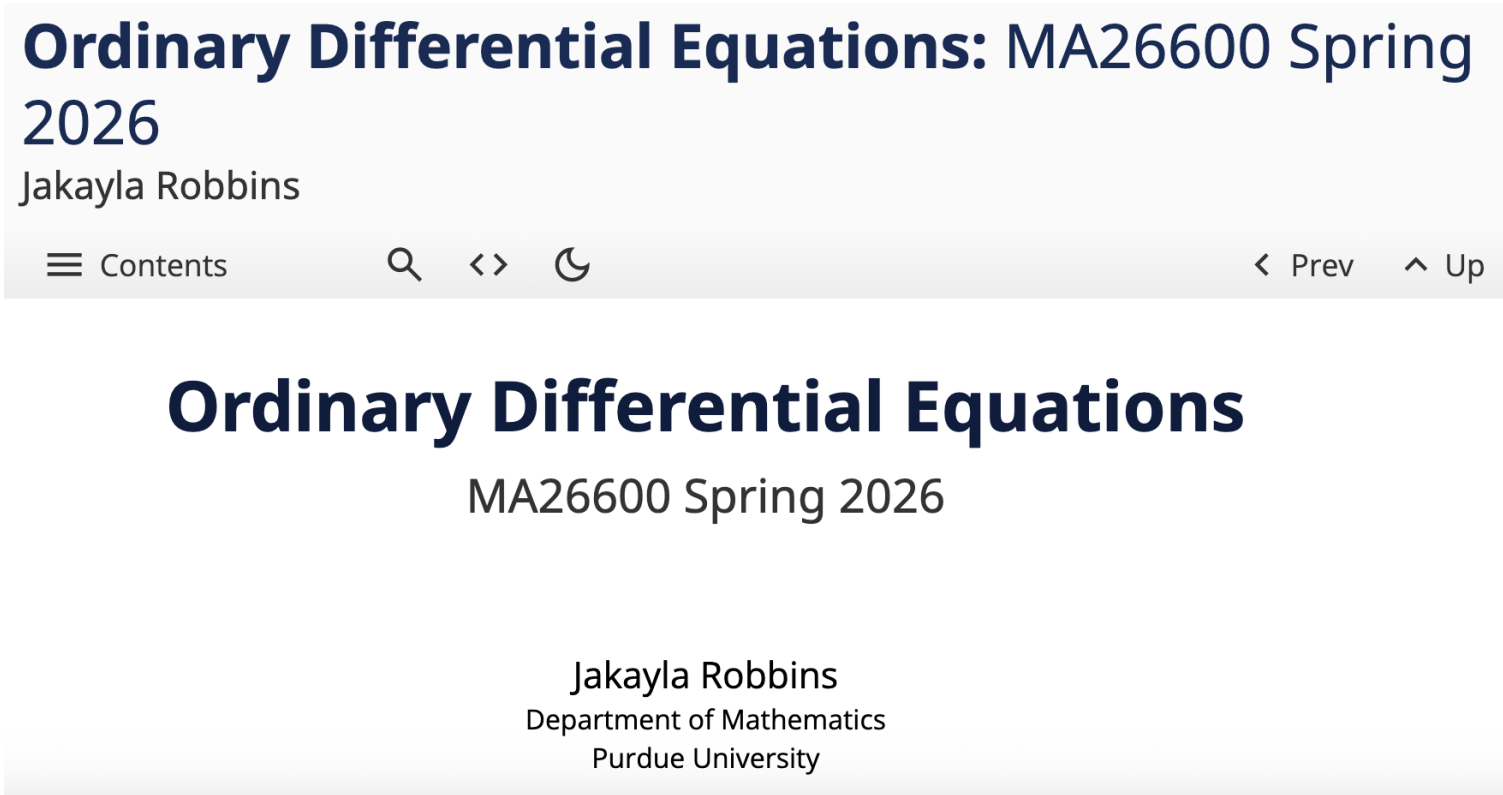
New Platforms

- PreTeXt:



New Platforms

- PreTeXt (Examples from Jakayla Robbins): `https://www.math.purdue.edu/~jrrobbin/spring26_266/frontmatter.html`



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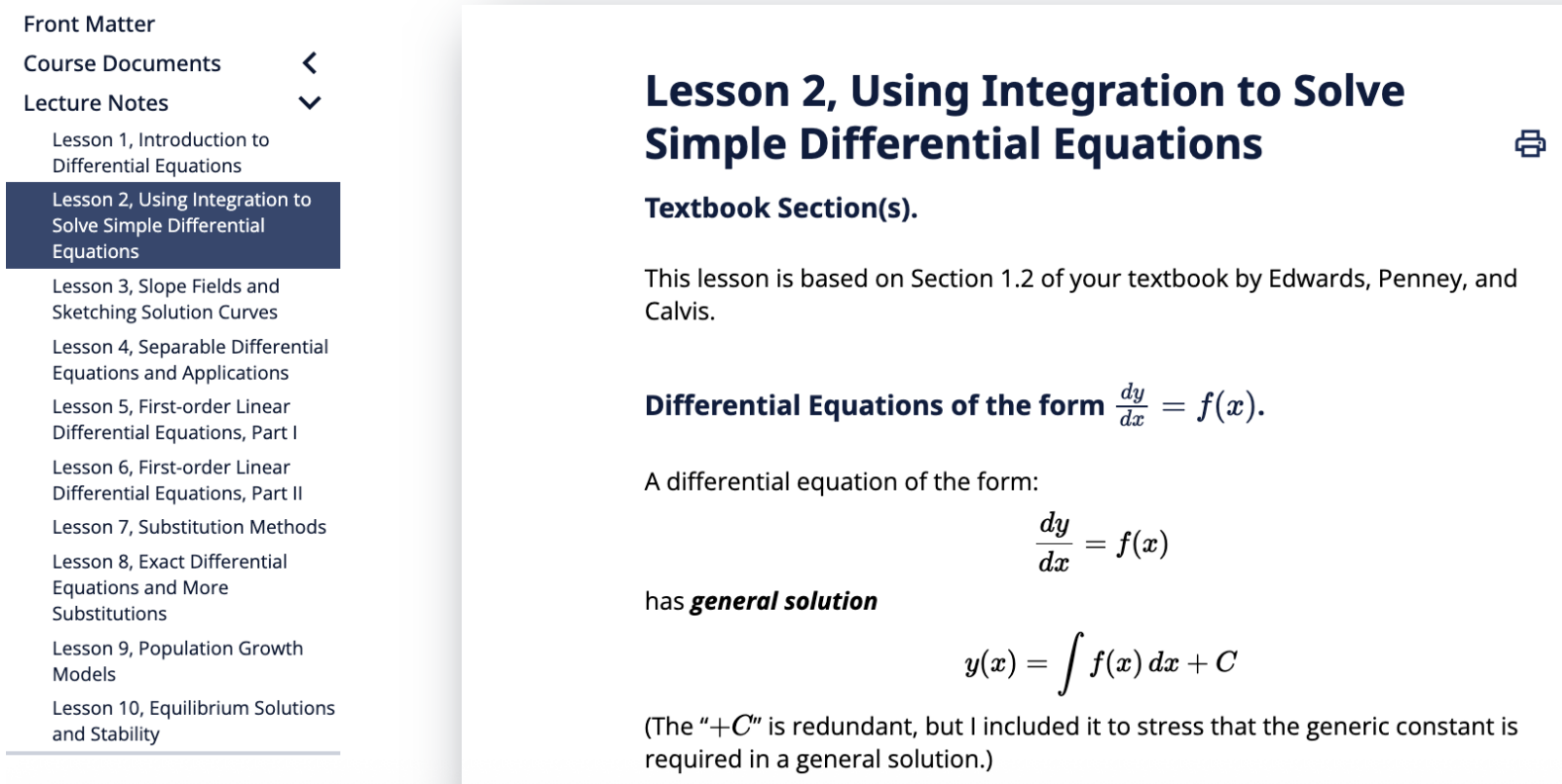

Rule on Archived Web Content

`https://www.ada.gov/resources/2024-03-08-web-rule/`

Web content that meets **all four** of the following points would not need to meet WCAG 2.1, Level AA:

(a). The content was created before the date the state or local government must comply with this rule, or reproduces paper documents or the contents of other physical media (audiotapes, film negatives, and CD-ROMs for example) that were created before the government must comply with this rule, **AND**

(b). The content is kept only for reference, research, or recordkeeping, **AND**

(c). The content is kept in a special area for archived content, **AND**

(d). The content has not been changed since it was archived.