# Leveraging LaTeX Outline: Using LaTeX to Craft Accessible Math in Digital Documents

1. **Introductions (10 min)**
2. **Why LaTeX Math? LaTeX’s role in Creating Accessible Math (5 min)**
   1. What is LaTeX Math?
   2. What is accessible digital math?
   3. How does a LaTeX math expression become accessible digital math?
      1. Converting LaTeX math into MathML
      2. Converting LaTeX math into MathType objects
      3. Converting LaTeX math into Office Math objects
   4. Why not just use plain text characters or images for math?
   5. How does LaTeX math become braille?
3. **Basics of LaTeX Math (15 min)**
   1. LaTeX math: symbols and syntax
   2. Operators, Numbers, and Text
   3. Superscripts and Subscripts
   4. Greek Letters and other Symbols
   5. Parenthesis, Brackets, and Delimiters
   6. Fractions and Roots
   7. Common Mathematic Functions (sin, cos, log, ln, etc.)
   8. Summations, Integrals, and Limits
   9. Matrices and Arrays
   10. LaTeX math delimiters
   11. Equation “Environments”, numbered equations, equation references
4. **Hearing How Digital Math Sounds to Users of Assistive Technology (10 min)**:
   1. Explain how screen readers interpret digital math.
   2. Discuss best practices for creating LaTeX that is not just visually accurate but also semantically correct for accessible digital math.
   3. Use tools or live examples to demonstrate how different LaTeX expressions will sound when read by assistive technology.
5. **Accessibility Considerations When Authoring LaTeX (5 min)**
   1. Accessibility considerations
   2. Examples of poorly accessible LaTeX / MathML
   3. Limitations
6. **Where LaTeX math expressions work (5 min)**
7. **Exercise: Creating Accessible Math with LaTeX (15 min)**
8. **Break! (10 minutes)**
9. **Going Further with LaTeX (5 min)**
   1. Resources for learning to create advanced LaTeX math expressions
10. **Tools for Creating LaTeX from Images/PDFs (20 min)**
    1. Demonstrations on Tools for converting images, PDFs, or other formats of math into (and out of) LaTeX.
       1. MathType
       2. Microsoft Word
       3. MathPix Snip and MathPix Snipping
       4. TextHelp’s EquatIO
       5. MathJax
       6. Pandoc
       7. ChatGPT
    2. Exercises: Use demos of the above tools to create accessible math.
    3. Discuss the tools and their pros and cons.
11. **Supporting Faculty in Creating Accessible Math (5 min)**
    1. Discuss the common issues faculty might face when trying to create accessible math content.
    2. Provide tips and guidance on how to support and educate faculty in using LaTeX for creating accessible math.
    3. Discuss strategies for advocating the importance of accessible math to faculty.
12. **Tips on Hiring Alt-media, Instructional Designers, etc. to work with LaTeX (5 min)**
    1. Where to find them
    2. Tips for what to include in a job description
    3. Good questions to ask
    4. Have them do an in interview writing sample
13. **Question and Answer Session (10 min)**