

# LaTeX Package Availability Checker

## Testing Your Local Installation

Generated Test Document

March 30, 2025

### Abstract

This document attempts to check for the existence of `.sty` files for a wide variety of common and specialized LaTeX packages to help determine if they are installed in your local TeX distribution (like TeX Live or MiKTeX). Check the output below. **Crucially, this check does NOT guarantee the package will load correctly.** You must attempt to use `\usepackage` for the package in the preamble of your *\*actual\** document and then examine the `.log` file generated during that compilation for detailed error messages if any packages fail to load due to dependencies, conflicts, or internal errors.

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## Compilation Information & Instructions

**Detected Engine:** pdfTeX (or a derivative compatible with `ifpdf`)

### How to Compile This Checker:

- Use your standard LaTeX compiler (e.g., `pdflatex`, `lualatex`, `xelatex`).
- Compile this file: `pdflatex package_checker.tex` (or your preferred engine).
- Because this checker now only checks file existence, `'nonstopmode'` is less critical for *\*this specific file\**, but still useful when compiling your *\*actual\** documents to find missing packages.

### How to Interpret Results:

- **[File Found]** (*Exists...*): The package file (`.sty`) was found by LaTeX in its search path. This means the package is likely installed. However, this DOES NOT guarantee it will load without errors when used in your document's preamble.
- **[File Not Found]** ② *Package file ... missing!*: The package file (`.sty`) could not be located by LaTeX. It needs to be installed using your TeX distribution's package manager.
- **Check the `.log` file of your *\*actual\** document!** This cannot be stressed enough. When you compile your *\*own\** document that uses `\usepackage{somepackage}` in its preamble, the `.log` file from *\*that\** compilation is the definitive source for diagnosing issues. Look for errors like `! LaTeX Error: File `...' not found.` or any other warnings/errors that appear after a package is loaded.
- Some packages might exist but have external dependencies (e.g., `'minted'` needs Python/Pygments, `'svg'` needs Inkscape) or require specific compilation workflows (e.g., `'pstricks'` often needs `'latex -> dvips -> ps2pdf'`). This check only verifies the LaTeX `.sty` file existence.

### Installing Missing Packages:

- **TeX Live:** Use the ‘tlmgr’ command-line tool. Example:  
`tlmgr update --self && tlmgr install <packagename>`
  - **MiKTeX:** Use the MiKTeX Console (GUI) or the ‘mpm’ command-line tool. Often, MiKTeX can install missing packages automatically on-the-fly if configured to do so.
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## Core & Essential Packages

- **amsmath:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **amssymb:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **amsfonts:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **graphicx:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **xcolor:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **geometry:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **hyperref:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **babel:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **ifthen:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **calc:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

## Mathematics & Symbols

- **amsthm:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **mathtools:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **bm:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **siunitx:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **physics:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **cancel:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- **diffcoeff:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

## Graphics & Drawing

- **tikz:** **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

- pgfplots: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- pst-plot: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- pstricks: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- epstopdf: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- svg: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

## Tables

- booktabs: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- longtable: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- array: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- multirow: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- tabularx: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- colortbl: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- tabu: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- makecell: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

## Fonts & Encodings

- fontenc: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- inputenc: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- lmodern: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- textcomp: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- mathpazo: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- helvet: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- courier: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- mathptmx: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- fontspec: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
- unicode-math: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*

## Bibliography

- `natbib`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `biblatex`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)

*Note: `biblatex.sty` found. Remember it requires a backend (Biber recommended or BibTeX) configured in your build process.*

## Code Listings & Verbatim

- `listings`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `minted`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)

*Note: `minted.sty` found. Remember it requires Python, Pygments, and the `-shell-escape` compilation flag to function.*

- `fancyvrb`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)

## Layout & Formatting

- `enumitem`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `setspace`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `fancyhdr`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `titlesec`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `tocloft`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `paralist`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `lettrine`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `microtype`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `soul`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)

## References & Citations

- `cleveref`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `varioref`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)
- `xr`: **[File Found]** (Exists. Loading success/failure must be checked in `.log` of actual document compilation.)

## Advanced & Miscellaneous

- `datatool`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `xparse`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `expl3`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `pdfpages`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `standalone`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `float`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `caption`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `subcaption`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `transparent`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
  - `todonotes`: **[File Found]** *(Exists. Loading success/failure must be checked in .log of actual document compilation.)*
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## Check Complete

Review the messages above.

- If a package file is marked **[File Not Found]**, you need to install it using your TeX distribution's package manager (`tlmgr` for TeX Live, MiKTeX Console for MiKTeX).
- If a package file is marked **[File Found]**, it is likely installed. **However, you MUST verify it loads correctly by adding `\usepackage{packagename}` to the preamble of your actual document and checking the .log file from that compilation for any errors or warnings related to that package.**