

Troubleshooting LaTeX Errors in R Markdown (PDF Output)

Knitting R Markdown (.Rmd) files to PDF sometimes fails with LaTeX errors. This guide shows common causes and solutions for students.

1. Check that TinyTeX is Installed

RStudio uses TinyTeX (a lightweight TeX distribution). Run this in R:

```
tinytex::install_tinytex() # installs TinyTeX
tinytex::is_tinytex()      # checks if it's installed
```

2. Debug the Error Message

If knitting fails, you'll see an error like:

! LaTeX Error: File `XYZ.sty` not found.

This means a missing LaTeX package.

Fix it with:

```
tinytex::tlmgr_install("XYZ")
```

3. Common Missing Packages

Often needed: booktabs, caption, fancyhdr, framed, geometry, parskip, ulem, xcolor.

```
tinytex::tlmgr_install(c("booktabs", "caption", "fancyhdr",
                        "framed", "geometry", "parskip", "ulem", "xcolor"))
```

4. Check the YAML Header

Make sure your Rmd starts like this (correct indentation is important):

```
---
title: "My Report"
author: "Mahshid"
date: "`r Sys.Date()`"
```

```
output: pdf_document
fontsize: 11pt
geometry: margin=1in
---
```

5. If Still Broken

Reset TinyTeX:

```
tinytex::reinstall_tinytex()
```

- If PDF fails, try knitting to HTML first. If HTML works but PDF fails → it's a LaTeX issue.
- Look carefully at the error message. Usually it's a missing `.sty` file.
- Install the missing LaTeX package with `tinytex::tlmgr_install()`.