

**LaTeX**

**Nathan Warner**



**Northern Illinois  
University**

Computer Science  
Northern Illinois University  
United States

## **Contents**

<b>1</b>	<b>Tabularx</b>	<b>2</b>
<b>2</b>	<b>Booktabs</b>	<b>3</b>

## Tabularx

- **Standard column specifiers (from tabular):** These work in any tabular or tabularx environment:

Specifier	Alignment	Text wrapping	Notes
l	Left-aligned	No	Each cell fits content width; text doesn't wrap.
c	Centered	No	Centered horizontally; fixed to content width.
r	Right-aligned	No	Good for numbers.
p{width}	Paragraph column	Yes	Fixed width; text wraps automatically.
m{width}	Paragraph column (vertically centered)	Yes	Requires array package.
b{width}	Paragraph column (bottom-aligned)	Yes	Requires array package.

- **tabularx-specific specifiers:** The tabularx package adds the magic column type:

Specifier	Alignment	Text wrapping	Description
X	Justified (like p{})	Yes	Automatically expands or shrinks to make the table fit the specified total width.

You can think of X as a “flexible” version of p. The table width (e.g., \textwidth) is distributed among all X columns proportionally.

```
o \begin{tabularx}{\textwidth}{l X l}
```

- **Modifiers:**

Syntax	Meaning	Example
@{text}	Inserts custom text or spacing between columns	@{\hspace{1em}} or @{-}
@{}	Removes default inter-column space	@{} X @{}}
>{declaration}	Applies a LaTeX command at the start of each cell in that column	>{\centering\arraybackslash slash}p{3cm}
<{declaration}	Applies a command at the end of each cell	<{\hfill}

## Booktabs

- **Booktabs:** booktabs is a LaTeX package that improves table appearance by providing better horizontal rules (lines) and proper spacing — making tables look like those in professional books and journals (hence the name booktabs).

It replaces the default \hline-based style with commands that give you clean, typographically correct tables.

Command	Purpose	Typical Use
\toprule	Thick top line	Start of table
\midrule	Medium line	Between header and body
\bottomrule	Thick bottom line	End of table

Adds vertical whitespace around rules so text doesn't feel cramped. The booktabs manual explicitly advises not to use | — clean design relies on spacing, not lines.

- **Optional extras**

- \haddlinespace - adds extra vertical space between rows.
- \cmidrule(lr){1-2} - draws a partial horizontal line (useful for subheaders).