

From \begin to \end

The Complete LaTeX Guide

Day 1 of 7 — Setup & Document Anatomy

Instructor: Atikur Rahman

Organized by: White Globe Initiative

Instructor Email: atik@whiteglobeinitiative.org

General Contact: contact@whiteglobeinitiative.org

Format: 7-Day Intensive Course

Session: Day 1 of 7

Today's Agenda

- 1 Why LaTeX?
- 2 Getting Started with Overleaf
- 3 Anatomy of a Document
- 4 Structuring Your Paper
- 5 Text Formatting
- 6 Reading Compile Errors
- 7 Practice

What Is LaTeX?

LaTeX is a **typesetting system**, not a word processor. Instead of clicking buttons to make text bold or centered, you write plain text with commands – called **markup** – that describe the *structure* of your document, and a compiler turns that markup into a finished PDF. This is the opposite of Word or Google Docs, where what you see on screen *is* the final output (**WYSIWYG**); in LaTeX, you describe what you *mean*, and the system decides how it *looks* (**WYSIWYM**).

	Word / Google Docs	LaTeX
Editing	Visual, direct	Source code + compile
Equations	Clunky editor	Native, precise
Tables & refs	Manual	Automatic numbering
Large documents	Fragile	Robust, modular

Why Economists Use LaTeX

Four reasons economists adopt LaTeX over Word: **equations** (regressions, production functions, and game-theory payoffs are typeset natively and precisely, not pasted in as blurry images); **tables** (publication-quality regression tables in the exact style journals expect); **reproducibility** (plain-text source works cleanly with version control and co-author collaboration); and **journal requirements** (AER, JPE, QJE, and most Elsevier economics journals accept – or require – LaTeX and provide official templates, covered on Day 6). Bibliography management (BibTeX/natbib, Day 4) automates citations on top of all of this.

Overleaf: Your LaTeX Environment

Overleaf (overleaf.com) is a free, browser-based LaTeX editor – nothing to install, everything compiles in the cloud. The editor has two halves: a **source pane** on the left, where you type LaTeX code, and a **PDF preview** on the right, which updates every time you **recompile** (click the green button, or press Ctrl/Cmd+Enter). Today's workflow: New Project → Blank Project → type code → compile → read the result → repeat. You will do this dozens of times today – that loop *is* how LaTeX is learned.

The Minimal LaTeX Document

```
\documentclass{article}

\begin{document}
Hello, economics!
\end{document}
```

Compiled Output

Hello, economics!

Why & What: Every LaTeX file has exactly this skeleton. The **preamble** (everything before `\begin{document}`) configures the document – here it just names the class. The **body** (between `\begin{document}` and `\end{document}`) is what actually gets typeset. Nothing outside document ever appears in your PDF.

Document Class & Packages

```
\documentclass[11pt,a4paper]{article}  
\usepackage[utf8]{inputenc}  
\usepackage{amsmath}    % math tools (Day 2)  
\usepackage{graphicx}   % images (Day 3)
```

Why & What: `\documentclass{article}` tells LaTeX what *kind* of document you're building – `article` is correct for papers and working papers (`report` and `book` exist for longer documents). The options in `[...]` set font size and paper size. Each `\usepackage{...}` loads one extra tool – almost everything useful in LaTeX (math, images, colors, citations) comes from a package, not the core language. This code has no visible output by itself – it configures everything that follows.

The Title Block

```
\title{The Optimal Health-Investment Share}  
\author{Atikur Rahman \ White Globe Initiative}  
\date{\today}  
  
\begin{document}  
\maketitle
```

Compiled Output

The Optimal Health-Investment Share

Atikur Rahman
White Globe Initiative
July 23, 2026

Why & What: `\title`, `\author`, and `\date` are declared in the preamble – they just *store* the information. Nothing is drawn until `\maketitle` is called inside the body, which is what actually renders the centered title block you see above. `\today` auto-inserts the compile date.

Sections and Subsections

```
\section{Introduction}  
\subsection{Motivation}  
  
\section{Data and Methodology}
```

Compiled Output

- 1 Introduction**
- 1.1 Motivation**
- 2 Data and Methodology**

Why & What: LaTeX **auto-numbers** every section and subsection in order – notice how Introduction became “1” and Motivation became “1.1” with no numbers typed anywhere in the code. Insert or delete a section later and everything rennumbers automatically. This structure also powers the table of contents and cross-referencing you’ll use from Day 4 onward.

Paragraphs and Line Breaks

```
This is one paragraph. LaTeX ignores  
single line breaks in your source code.
```

```
A blank line starts a new paragraph.
```

Compiled Output

This is one paragraph. LaTeX ignores single line breaks in your source code.

A blank line starts a new paragraph.

Why & What: Notice the source has a line break after “code” but the output reads as one continuous sentence – LaTeX treats a single line break as just a space. Only a truly **blank line** in your source starts a new paragraph (with the usual first-line indent). To force a line break *without* starting a new paragraph, use `\\` instead.

Bold, Italics, and Comments

```
This finding is \textbf{statistically significant}  
at the \textit{5\% level}. % not the 10% level
```

```
Growth was \underline{negative} in 2020.
```

Compiled Output

This finding is **statistically significant** at the *5% level*.

Growth was negative in 2020.

Why & What: `\textbf{...}` bolds, `\textit{...}` italicizes, `\underline{...}` underlines (rare in print economics papers – use sparingly). The % comment and everything after it on that line **never appears in the output** – it's a note to yourself or a co-author. Special characters (% \$ & # _) need a backslash when you mean them literally, since LaTeX normally reads them as commands.

Your First Compile Errors

```
\textb{Significant results}
```

Compiled Output

```
! Undefined control sequence.
```

```
1.12 \textb{Significant results}
```

No PDF is produced until this is fixed.

Why & What: This is a typo: `\textb` isn't a real command (it should be `\textbf`). LaTeX stops and reports the exact line number – in Overleaf this line is underlined in red, and clicking it jumps you straight there. The two other errors you'll meet constantly: *Missing \$ inserted* (a math symbol used outside math mode – fixed properly on Day 2) and a mismatched `\begin/\end` pair (an environment opened but never closed).

Hands-on Exercise

In a new Overleaf project, recreate the **title page and abstract** of a real, published economics paper:

- 1 Title, author, and date using `\title`, `\author`, `\date`, `\maketitle`.
- 2 An Abstract section with one paragraph of body text.
- 3 A first `\section{Introduction}` heading.
- 4 Bold at least one key term and italicize one phrase.

Compile at least **five times**, intentionally breaking and fixing something each time (misspell a command, delete a brace, forget %) – and read what the resulting error says before you fix it.

Homework Before Day 2

Homework

Pick the article you will rebuild all week (your own draft is ideal). Retype just the **introduction paragraph** into your Overleaf project – no math or tables yet, those start tomorrow.

Resources for today:

- Overleaf – “Learn LaTeX in 30 Minutes”
- Overleaf – “Creating your first document in LaTeX”
- Overleaf – “Paragraphs and new lines” / “Bold, italics and underlining”
- Wikibooks LaTeX – Getting Started chapter

Math Mode for Economists

Equations, subscripts, Greek letters, summations, and matrices – typesetting the models you actually work with.

Thank You

From `\begin` to `\end`: The Complete LaTeX Guide

Day 1 of 7 — Setup & Document Anatomy

Atikur Rahman

White Globe Initiative

`atik@whiteglobeinitiative.org`

`contact@whiteglobeinitiative.org`