

# Introduction to L<sup>A</sup>T<sub>E</sub>X

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### Abstract

This document is prepared as a handy reference guide for the class **Introduction to L<sup>A</sup>T<sub>E</sub>X**. Different topics covered in the class are organized in different sections. You should be able to use this as a template and write your own version of report, article or thesis. At some places I use `blindtext` which is fancy word for *gibberish*. It is used to show the formatting and look of the document. However in sections concerning line-breaks, special characters, math symbols and citations I use text that should be used by looking at the corresponding latex code.

## 1 List

- 1 Cup Spinach
- 1 Cup Frozen Blueberries
- 2 Bananas
- 1.5 Cups Almond Milk
- Powders
  - 1 Tbs PBJ
  - 1 Tsp Amla Powder
    - \* 1 tsp sugar
    - \* 0.5 tsp salt
- six Dates

## 2 Enumeration

1. 1 Cup Spinach
2. 1 Cup Frozen Blueberries
3. 2 Bananas
4. 1.5 Cups Almond Milk
5. Powders
  - (a) 1 Tbs PBJ
  - (b) 1 Tsp Amla Powder
    - i. 1 tsp sugar
    - ii. 0.5 tsp salt
6. six Dates

## 3 Figure



Figure 1: This is a figure!

## 4 Wrapped Figure

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning.

This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.



Figure 2: This is a wrapped figure!

## 5 Sub-sections

Section body!

### 5.1 Name of subsection

Sub-section body!

#### 5.1.1 Name of subsubsection

Sub-sub-section body!

### Sub-section w/o a name

Sub-section body!

## 6 Line Breaks

First-line of a section is not indented. A simple carriage-return (enter) doesn't change anything. To get a line-break enter two backslashes (`\`) after the end of line.

This line appears after a line-break. Note that here also there is no-indent.

In fact, multiple line-breaks also do not create indent! More space can be added by specifying amount.

Lot of gap now!

Adding two carriage-returns (enters) means a change of paragraph. Here there will be indent. You can use `\noindent` to skip indentation.

No indent here! If you want no indentation in the entire document then use `\usepackage{parskip}`

## 7 Special Characters

Latex has some special characters: `{`, `}`, `#`, `%`, `$`, `&`, `_` and, `\`. To print them you must use a `\`, i.e. `\{`, `\}`, `\#`, `\%`, `\$`, `\&` and, `\_`. For printing `\` you have to use the command `\textbackslash`

Alternatively, you could use `\{` to print `{`

## 8 Tabbing

A simple tabbed list. Think of it like a bare-bone table without lines.

S.No.	Name	City	Area
1	Nikhil	Agra	Finance
2	Abhishek	Ranchi	Economics
3	Pranjal	Raipur	Decision Sciences

## 9 Tabular

Name	Command	Sample Text
italic	<code>\textit</code>	<i>abcdefgh</i>
bold	<code>\textbf</code>	<b>abcdefgh</b>
small capped	<code>\textsc</code>	ABCDEFGH
roman family	<code>\textrm</code>	abcdefgh
sans serif	<code>\textsf</code>	abcdefgh
typewriter	<code>\texttt</code>	abcdefgh

## 10 Table

Name	Command	Sample Text
italic	<code>\textit</code>	<i>abcdefgh</i>
bold	<code>\textbf</code>	<b>abcdefgh</b>

Table 1: This is a table

## 11 Changing font size

Fontsize	Latex command	Ouput
tiny	<code>\tiny{Sampe text}</code>	Sampe text
scriptsize	<code>\scriptsize{Sampe text}</code>	Sampe text
footnotesize	<code>\footnotesize{Sampe text}</code>	Sampe text
small	<code>\small{Sampe text}</code>	Sampe text
normalsize	<code>\normalsize{Sampe text}</code>	Sampe text
large	<code>\large{Sampe text}</code>	Sampe text
Large	<code>\Large{Sampe text}</code>	Sampe text
LARGE	<code>\LARGE{Sampe text}</code>	Sampe text
huge	<code>\huge{Sampe text}</code>	Sampe text
Huge	<code>\Huge{Sampe text}</code>	Sampe text

## 12 Quote

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest



gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place.  $\sin^2(\alpha) + \cos^2(\beta) = 1$ . If you read this text, you will get no information  $E = mc^2$ . Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look.  $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$ . This text should contain all letters of the alphabet and it should be written in of the original language.  $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$ . There is no need for special content, but the length of words should match the language.  $a\sqrt[n]{b} = \sqrt[n]{a^n b}$ .

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

## 13 Cross-Referencing

### 13.1 One

See Sections [13.1](#), [13.2](#) and, [13.2.1](#). Also see Table [2](#) and Figure [3](#).

### 13.2 Two

See Sections [13.1](#), [13.2](#) and, [13.2.1](#). Also see Table [2](#) and Figure [3](#).

#### 13.2.1 Inside Two

See Sections [13.1](#), [13.2](#) and, [13.2.1](#). Also see Table [2](#) and Figure [3](#).

a	b
c	d

Table 2: Tabel Caption



Figure 3: Figure Caption

## 14 URL

URL: <https://sraf.nd.edu/>

Hyperlink: [Subsection One](#)

Weblink: [Google](#)

## 15 Footnote

Adding a footnote is as easy as writing your text<sup>1</sup> and then continue writing where you left!

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<sup>1</sup>and then suddenly put everything inside `\footnote{}`

## 16 Sub Figures



(a) Sub-caption 1



(b) Sub-caption 2

Figure 4: Main caption

## 17 parbox and Minipage

### 17.1 parbox

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

## 17.2 Minipage

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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## 18 Math Symbols

At any point in your test you can insert math by enclosing math formulas inside ‘\$ \$’ or ‘\(\ \)’ . You can math on a new line if you enclose math symbols within ‘\[ \]’ or ‘\$\$ \$\$’.

Quadratic equation is  $ax^2 + bx + c = 0$  with  $a > 0$ . The roots are given by

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Figure 5 gives a list of math symbols.

## Math-mode symbols

$\leq$	<code>\leq</code>	$\geq$	<code>\geq</code>	$\neq$	<code>\neq</code>	$\approx$	<code>\approx</code>
$\times$	<code>\times</code>	$\div$	<code>\div</code>	$\pm$	<code>\pm</code>	$\cdot$	<code>\cdot</code>
$^\circ$	<code>\circ</code>	$\circ$	<code>\circ</code>	$'$	<code>\prime</code>	$\cdots$	<code>\cdots</code>
$\infty$	<code>\infty</code>	$\neg$	<code>\neg</code>	$\wedge$	<code>\wedge</code>	$\vee$	<code>\vee</code>
$\supset$	<code>\supset</code>	$\forall$	<code>\forall</code>	$\in$	<code>\in</code>	$\rightarrow$	<code>\rightarrow</code>
$\subset$	<code>\subset</code>	$\exists$	<code>\exists</code>	$\notin$	<code>\notin</code>	$\Rightarrow$	<code>\Rightarrow</code>
$\cup$	<code>\cup</code>	$\cap$	<code>\cap</code>	$ $	<code>\mid</code>	$\Leftrightarrow$	<code>\Leftrightarrow</code>
$\dot{a}$	<code>\dot{a}</code>	$\hat{a}$	<code>\hat{a}</code>	$\bar{a}$	<code>\bar{a}</code>	$\tilde{a}$	<code>\tilde{a}</code>
$\alpha$	<code>\alpha</code>	$\beta$	<code>\beta</code>	$\gamma$	<code>\gamma</code>	$\delta$	<code>\delta</code>
$\epsilon$	<code>\epsilon</code>	$\zeta$	<code>\zeta</code>	$\eta$	<code>\eta</code>	$\varepsilon$	<code>\varepsilon</code>
$\theta$	<code>\theta</code>	$\iota$	<code>\iota</code>	$\kappa$	<code>\kappa</code>	$\vartheta$	<code>\vartheta</code>
$\lambda$	<code>\lambda</code>	$\mu$	<code>\mu</code>	$\nu$	<code>\nu</code>	$\xi$	<code>\xi</code>
$\pi$	<code>\pi</code>	$\rho$	<code>\rho</code>	$\sigma$	<code>\sigma</code>	$\tau$	<code>\tau</code>
$\upsilon$	<code>\upsilon</code>	$\phi$	<code>\phi</code>	$\chi$	<code>\chi</code>	$\psi$	<code>\psi</code>
$\omega$	<code>\omega</code>	$\Gamma$	<code>\Gamma</code>	$\Delta$	<code>\Delta</code>	$\Theta$	<code>\Theta</code>
$\Lambda$	<code>\Lambda</code>	$\Xi$	<code>\Xi</code>	$\Pi$	<code>\Pi</code>	$\Sigma$	<code>\Sigma</code>
$\Upsilon$	<code>\Upsilon</code>	$\Phi$	<code>\Phi</code>	$\Psi$	<code>\Psi</code>	$\Omega$	<code>\Omega</code>

Figure 5: List of math symbols. There are many more. See <https://ctan.um.ac.ir/info/symbols/comprehensive/symbols-a4.pdf#page=123>

## 19 Equation

See equation 1,

$$\frac{df}{dt} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h} \quad (1)$$

$$F = G \frac{m_1 m_2}{r^2}$$

$$\begin{aligned} (x+y)^2 &= (x+y)(x+y) \\ &= x^2 + xy + yx + y^2 \\ &= x^2 + 2xy + y^2 \end{aligned}$$

$$(x + y)^2 = (x + y)(x + y) \tag{2}$$

$$= x^2 + xy + yx + y^2 \tag{3}$$

$$= x^2 + 2xy + y^2 \tag{4}$$

$$\begin{aligned} (x + y)^2 &= (x + y)(x + y) \\ &= x^2 + xy + yx + y^2 \\ &= x^2 + 2xy + y^2 \end{aligned} \tag{5}$$

20

Matrix

$$\begin{array}{ccccccc} \leq & \geq & \left(\infty \quad \lim\right) & \left[\begin{array}{cc} f & ff \\ \oint & \Sigma \end{array}\right] & \left\{\begin{array}{cc} \oplus & \otimes \\ \circ & \subset \end{array}\right\} & \left|\begin{array}{cc} 1/2 & a^2 \\ \sqrt{5} & a_{22} \end{array}\right| \end{array}$$

21

Multi-page Table

Table 3: Disagreement by Industry

**Optional Description:** Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Industry	% Sample	Avg. Disagreement (Ranks)	Std. Dev. of Disagreement (Ranks)
Coal	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9

to be continued...

Table 3: Disagreement by Industry (*continued*)

Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9
Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
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Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9
Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9
Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9

*to be continued...*

Table 3: Disagreement by Industry (*continued*)

Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9
Construction	1.27	53.4	24.3
<b>Coal</b>	0.19	53.2	24.4
Pharmaceuticals	5.52	69.6	22.3
Precious-Metals	0.28	59.9	23.9
Medical-Equipment	2.88	58.1	25.8
Computers	3.43	56.2	24.9
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Computers	3.43	56.2	24.9
Real-Estate	0.75	56.0	24.6
IT Services	9.87	54.3	24.9
Construction	1.27	53.4	24.3

*Note:* All independent variables are one month lagged variables. Definitions of all the variables appears in Appendix A2. All regression specifications have industry and year fixed effects. Standard errors are double clustered by firm and year-month. Statistical significance of 10%, 5% and 1% are indicated by \*, \*\* and \*\*\* respectively.

## 22 Citing

It is no surprise that the year 1905 is hailed as the miracle year of science. In a series of four papers Einstein (1905a; 1905b; 1905c; 1905d) changed the way we understand modern physics. Einstein (1905d) demonstrated particle nature of light, Einstein (1905c) gave evidence of existence of atoms, Einstein (1905b) proposed modifications to notion of time at speeds approaching  $c$  and Einstein (1905a) finally showed equivalence between mass and energy through  $E = mc^2$ . Later, Einstein (1923) explained gravity as a curvature of spacetime against the accepted notion of it being a perceived force.

The first citation Dravid, Tendulkar, Laxman, and Ganguly (2011) always list all authors. Subsequent citations Dravid et al. (2011) will be abbreviated with ‘et al.’. To



get a full citation [Dravid, Tendulkar, Laxman, and Ganguly \(2011\)](#) use ‘\cite\*’ instead.

## References

- Dravid, R., Tendulkar, S. R., Laxman, V., & Ganguly, S. (2011). It is an axample. *Cricket, World Cup*, 1–11.
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